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THE SIXTY-SEVENTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN NEW YORK CITY, DATE TO BE NAMED.

The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also meet in New York City in 1919.

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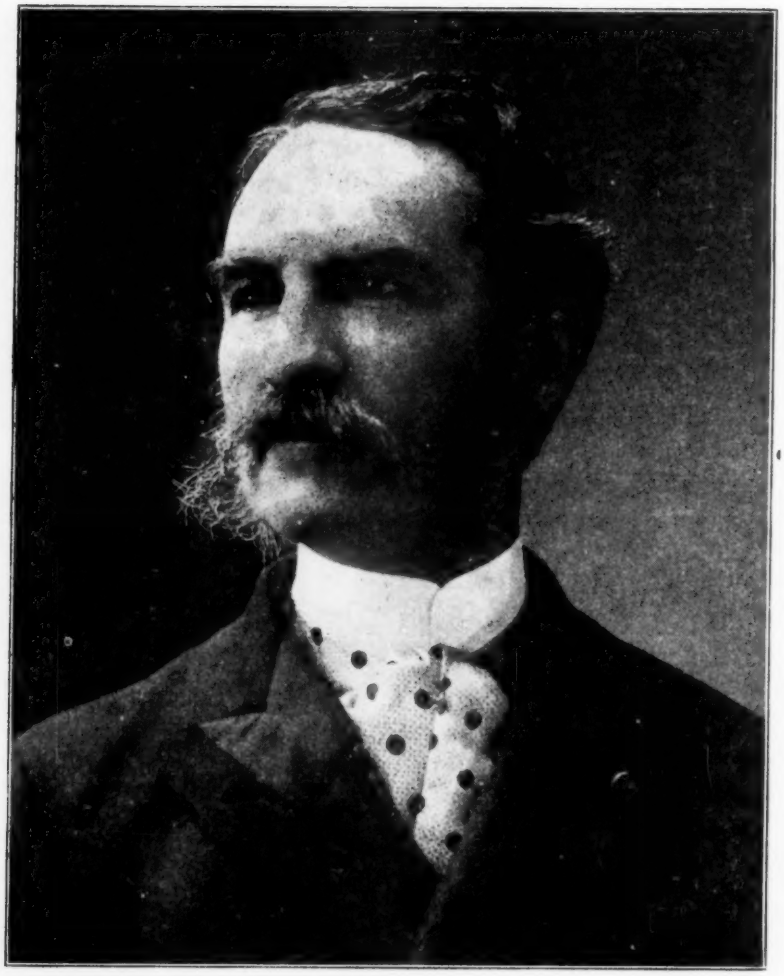

T. H. PATTERSON

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. VIII FEBRUARY, 1919 NO. 2

THEODORE HENRY PATTERSON.

Theodore H. Patterson's American ancestry dates back to December 1685; a great grandfather was captain in a regiment of Washington's Life Guards. The subject of this sketch was born in Lorain county, Ohio, November 24, 1840. He received his early education in Elyria and Oberlin, Ohio, and when eighteen years of age began teaching school, utilizing vacation periods for furthering his own education preparatory to and in the study of medicine. He graduated from Charity Hospital Medical College at Cleveland, Ohio; soon thereafter he was appointed by Governor Brough of Ohio assistant surgeon in the 187th Regiment O. V. I., and was later promoted to major and Surgeon-in-chief of the second military district of Georgia.

After the close of the war he came to Chicago and opened a drug store, which was continued by him for over half a century and for nearly forty years in the same locality. For a number of years he was actively interested in the Chicago College of Pharmacy, serving as secretary and trustee, also for a time as president. He assisted in organizing and establishing the Illinois College of Pharmacy, which later became attached to the Northwestern University. Dr. Patterson has always exhibited an interest in organizations for the advancement of pharmacy, joining the American Pharmaceutical Association, of which he is now fifty years a member, in 1869. He has been secretary and president of both the Illinois Pharmaceutical Association and Chicago Retail Druggists' Association. He is a member of the G. A. R., the Military Order of the Loyal Legion, and of both the York and Scottish Rites in Masonry.

He has a family of two sons and one daughter. One of the sons is Registrar Charles W. Patterson of the Northwestern University School of Medicine, who was for many years, prior to the merger of the Pharmacy Department, N. W. U., with the University of Illinois School of Pharmacy, a member of the faculty of the former institution. The other son is a resident of Seattle, Wash., and his father is now at home with him. For the data of this writing we are indebted to the anniversary volume of the Chicago Veteran Druggists' Association, of which organization Dr. Theodore H. Patterson is an honored charter member.

E. G. E.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

THE NEXT REVISION OF THE U. S. PHARMACOPOEIA.

THE U. S. Pharmacopoeia is, admittedly, the leading pharmacopoeia of the world, and it is so because it is the most representative. Unlike all foreign pharmacopoeias, it is not published under governmental auspices, but in accordance with general principles determined by a convention composed of representatives from all sections of the country, the detailed application of these principles being worked out by a committee of revision elected by the convention from its membership.

The United States is the melting pot of the world. While its main stem is of Anglo-Saxon stock, its branches embrace the people of all nations, and in the framing of a pharmacopoeia for such a people, it is obvious that the founders of the present system of revision of the Pharmacopoeia of the United States builded far wiser than they knew in requiring a country-wide representative convention to determine the country-wide medical and pharmaceutical needs.

The needs of our nation in the way of medical material are not local. They are not governed by what is used only in Chicago, New York or Philadelphia, but what is used in *all* sections of the country. For example, Aconite is used in the Northern States, and Veratrum Viride in the Southern States, for the same therapeutic purposes. Solution of Iron and Ammonium Acetate is used on the Atlantic Coast, while other iron preparations are used on the Pacific Coast for the same purposes. The physician cannot and must not be handicapped in the selection of the drug-tools he works with, in the treatment of disease, by a delimited materia medica.

Obviously, then, no bureau or department of the U. S. Government, with a small body of men, out of touch with conditions in all sections of the country, even with an honorary advisory board (which would not be directly responsible), can hope to compare in efficiency with the thoroughly representative and wonderfully efficient system of revision now employed. True, the system can be improved, and this should be done with the closest coöperation between the Government departments and the Committee of Revision.

A matter of the greatest importance in the next revision of the United States Pharmacopoeia is the selection of delegates by schools of pharmacy and various associations that have representation in the Pharmacopoeial Convention. The delegates have a voice in the basic work of the revision and should be qualified for service on the Committee on Revision.

The Tenth Decennial Convention meets in May of next year and the selection of delegates by associations should be made this year. The revision of the Pharmacopoeia presents a timely subject for discussion. While the methods followed heretofore may not be perfect, they have been productive of what has been admitted to be the best of pharmacopoeias. The selection of members for the Committee on Revision in recent years has given representation to every department of medicine and pharmacy. The work is done, not only by those deeply interested, but usually by recognized experts in their particular line of work. It is true that the members serve practically without remuneration, but this has not caused them to neglect their duty. That the revision has not invariably proceeded as rapidly as should be the case is admitted, but this is a matter which can be corrected.

The main point is the determination of the general principles that shall obtain in the framing of the next Pharmacopoeia, and the selection of delegates that shall represent the best traditions of the medical and pharmaceutical professions.

E. G. E.

COÖPERATION IN STANDARDIZATION AND SPECIFICATIONS.

ROBERT P. FISCHELIS, in his address on protective gas masks before the New York and Philadelphia branches of the American Pharmaceutical Association, brought out the importance of coöperation in standardization and specifications. This was emphasized by the fact that lack of unity in standardization and specification caused some delay. The gas masks were essential for protecting the lives and health of thousands. The specifications were developed from experimentations in the laboratory on this protective apparatus; the experiences of the manufacturers may have been applicable for other purposes, but not for this. Until the order was made mandatory the manufacturers were inclined to furnish products according to their own ideas, which the experiences of many years, perhaps, had proven best.

The thought is applicable in many details of manufacture, not always explainable, but still the manipulation brings the desired result, and that is the essential thing. It meant little that according to art or science the other method was correct, when "over there" the lives and health of millions were at stake. We are not informed whether the points were empiric; it was sufficient that they contributed to a perfect mask and saved lives; the science can be proved later, if necessary.

Many instances could be cited of the harmful and costly effects of too rigid specifications, multiplicity of specifications, and of those loosely drawn. These facts have economic importance, and the experiences have established closer coöperation between the Government and the industries. The latter have been

represented by elected committees who have not only worked with the Government but established coöperation among firms and corporations and various branches of related industries. What has been done by the industries and the Government should be and has been done to some extent by the professions, and the coöperation should be closer among related professions. In the reconstruction of the Army Medical Department little, if anything, has been said of pharmacy and pharmacists. This is certainly not the best way to get best results. Unquestionably many discoveries in medical science have been made; just as in the construction of a pharmacopoeia all medical branches should be represented and coöperate, so also the useful armamentarium of the medical men is best developed through the working together for the interests of the professions and humanity. Medical research requires such coöperation.

Dr. George K. Burgess, in his address as President of the Philosophical Society of Washington, January 4, 1919, asks this question: "Is it well during the after-war period to demobilize completely this army of scientific men?" (men engaged in scientific work during the war). He preceded the question by the statement that "in America, individual initiative in the past has on the whole been more potent than the State in providing research. In the prosecution of the war, however, the federal government has spent huge sums on projects requiring scientific investigation and development, and in order to carry out the scientific projects of military urgency has mobilized the scientific men of the country." This work, so well begun, should be continued.

These specific points are applicable to standardization of drugs. There is a difference of opinion relative to the activity of many drugs, for example, digitalis, due to the fact that the coöperation between pharmacology and therapeutics is not as close as should be the case. This has been pointed out by Dr. Albion Walter Hewlett in his address as Chairman of the Section on Pharmacology and Therapeutics of the American Medical Association. Medical history and experience prove that contact between the science of drug action and the art of treatment is essential for best results. There should be closer coöperation between medicine and pharmacy in research. E. G. E.

COMPULSORY HEALTH INSURANCE.

UNDER Editorial Notes references are given to papers and reports that have heretofore appeared in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. These reports were largely concerned with the effect of Compulsory Health Insurance on the drug business. Quite naturally druggists are concerned along these lines, but if the proposition really is beneficial to the majority such special arguments would have little value.

Many legislatures are now in session and in some states Compulsory Health Insurance laws have been proposed. Druggists, as citizens, should take an active

interest in this legislation. Full light should be had on the subject, it should be rationally investigated, and foreign experience with such measures contrasted with the facts.

Relative to Compulsory Health Insurance President Samuel Gompers, of the American Federation of Labor, recently expressed himself as strongly opposed to the system, as follows:

"This fundamental fact stands out paramount, that social insurance cannot remove or prevent poverty. It does not get at the causes of social injustice.

"The efforts of trade organizations are directed at fundamental things. They endeavor to secure to all the workers a living wage that will enable them to have sanitary homes, conditions of living that are conducive to good health, adequate clothing, nourishing food and other things that are essential to the maintenance of good health. In attacking the health problem from the preventive and constructive side they are doing infinitely more than any health insurance could do which provides only for relief in case of sickness, and yet the compulsory law would undermine the trade-union activity. There must necessarily be a weakening of independence of spirit and virility when compulsory insurance is provided for so large a number of citizens of the state."

Magnus W. Alexander, of West Lynn, Mass., in the legislative hearings in New York State and Massachusetts, made use of these words:

"An impartial judge of the health insurance proposal will recognize that its chief function would be to distribute funds and to provide medical care; that it lays but weak emphasis on prevention of disease, the great consummation toward which all health betterment efforts should tend. Instead of saving the money of wage-earners and our people in general, it seems designed to waste it; instead of adding virility and efficiency to our people, it gives every promise to lower their standards of independence and to discourage American grit; instead of promoting initiative and research amongst the medical profession, it seems to threaten to retard it with political and professional surveillance, and with complicated machinery."

Members should see to it that in every State where Compulsory Health Insurance laws are proposed the subject is studied from every standpoint.

E. G. E.

COÖPERATION BETWEEN PHARMACOLOGY AND THERAPEUTICS.*

BY ALBION WALTER HEWLETT, M.D.

It is important that a healthy coöperation should exist between those who are engaged in the scientific study of drug action and those who use drugs for the purpose of curing or alleviating disease; for the problems of pharmacology, like those of pathology, have a very immediate bearing on medical practice. Established modes of treatment frequently form the starting point of scientific studies, and the exact knowledge thus gained leads in turn to greater precision in treatment. Pharmacologic studies have uncovered new therapeutic possibilities that have ultimately proved useful in the clinic. Finally, a clear recognition of the fact that substances of similar chemical structure frequently possess pharmacologic properties that are similar but not identical has opened up a vast field of research. Numerous compounds of a given type are now produced with comparative ease by the organic chemist. While many or most of these may possess no great practical advantage over their original prototypes, yet such studies are constantly leading to improvements in our remedies, and the possibility is always present that the systematic combination of chemical and pharmacologic research will tap important fields that have hardly been suspected hitherto.

Now more than ever before, therapeutic advance depends on an intelligent utilization of the methods, the criticisms and the new discoveries of pharmacology. Older remedies are being restudied, and from the host of newer ones that are constantly being placed before the profession an intelligent choice must be made. Before I undertake to discuss how coöperation between the pharmacologist and therapeutist may be promoted, however, it may be well to point out some of the factors which tend to separate these two classes of workers. In the first place, their attitudes toward their respective problems are essentially different. The pharmacologist contemplates with scientific skepticism that which is unproved, and he proceeds slowly and carefully from the known to the unknown. The therapeutist, on the other hand, brought face to face with a crisis in the life of his patient, cannot refuse to try the unproved when remedies of known efficacy are lacking. Hence he often grasps at straws, being restrained only by the possibility of doing harm to his patient. Such a practice, justifiable in itself, too often leads to those habits of inaccurate reasoning that are reflected in therapeutic literature. Optimism in practice often means an unjustified and uncritical enthusiasm in the interpretation of results.

The pharmacologist and the therapeutist are further separated by the conditions under which their observations are commonly made. In the laboratory the action of drugs is usually studied on normal animals, and toxic doses can be administered with impunity. In the clinic, on the other hand, therapeutic doses alone are used, and the effects of these are often modified by disease. The pharmacologist is permitted to employ methods of study which involve operative or other harmful procedures. The clinician is restricted to those methods of study that can be used without harm to his patient. Finally, the laboratory worker plans a

* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.—Reprinted from the *Journal of the A. M. A.*

series of experiments, and he endeavors to eliminate errors by repetition and by controlling the various factors that might influence his results. In therapeutics the number of observations is necessarily limited by the available clinical material, and the interpretation of results is often hampered by the fact that the effect of other factors, such as the natural course of the disease and the action of the other drugs used, is difficult to estimate and is, indeed, often estimated incorrectly. Under such conditions, years may elapse before even a simple therapeutic problem is conclusively answered.

As I have said, pharmacologic studies are usually made on normal animals. In seeking to utilize the knowledge thus obtained for therapeutic purposes, the following questions arise: 1. Are the effects observed produced by doses that can safely and easily be administered to patients? 2. Will the human organism react in the same manner as the animal studied? 3. How is this reaction modified by disease?

The question of dosage, simple as it may seem, has caused and will probably continue to cause occasional therapeutic stumbles. The fact that large doses of strychnine were known to produce a marked rise of arterial pressure in animal experiments was in part responsible for its extensive use by clinicians in conditions of low pressure. Yet it now seems established that in safe doses strychnine does not raise the blood pressure materially, either in man or in animals. The rise of pressure, therefore, is a toxic effect, and, so far as we know, it is not available for therapeutic purposes. Due consideration must also be given to the fact that in the laboratory intravenous injections are frequently used, whereas in medical practice these are seldom given except in emergencies. Finally, different species of animals may vary in their reactions to a given drug. When the reaction is essentially the same in a variety of mammals, it may be assumed that the human organism will respond in a similar manner; but when the reaction varies, the effect on man cannot safely be predicted from laboratory studies. In practice, moreover even lesser quantitative variations in response may become of paramount importance, for it is our purpose to secure therapeutic results, and at the same time to avoid unpleasant side effects.

One of the most important methods for helping to bridge over the gap between animal pharmacology and practical therapeutics is the accurate study of the effects produced when drugs are given in the usual medicinal doses to human beings. The methods employed in making such studies must naturally be free from the possibility of doing harm. Fortunately a great variety of new methods have been developed in recent years which may be applied to the study of human functions. Without attempting to name all of these, I mention the following: bloodless determinations of the arterial and venous pressures; graphic records of the gastric contractions, of the arterial and venous pulse waves and of the electric changes accompanying cardiac activity; roentgenographic examinations of the alimentary tract; determinations of the rate of metabolism; chemical analyses of the alveolar air, of small quantities of blood and of excreta, and estimations of the various immune bodies in the blood. Each new method that can be applied to the study of human functions not only advances our knowledge of these functions and of their perversions in disease, but also makes possible more accurate studies on how these functions are influenced by various remedial measures.

In many cases such studies can be carried out on normal individuals, and within a short space of time sufficient data can be accumulated to establish with scientific accuracy certain aspects of drug action.

Ultimately, however, we must answer the question: Are these drug effects of value in combating the disturbances of functions that are encountered in disease? The final answer to this question can seldom if ever be given from studies either on normal animals or on normal men. In certain instances the diseased function is unusually susceptible to drug action. The body temperature of a febrile patient, for example, is reduced more easily by antipyretic drugs than is the body temperature of a normal person. Digitalis in therapeutic doses has relatively little effect on the heart rate when this is controlled in the usual way from the sinus region. Its reputation for slowing the heart of patients is based almost exclusively on observations which were made on those suffering from auricular fibrillation. Diuretics of the caffeine group produce a moderate diuresis in the healthy man, and may be ineffective or harmful in nephritic edema, whereas in cardiac edema they often cause a veritable flood of urine. The dilatation of the bronchi produced by epinephrin is most plainly demonstrable in conditions of bronchial constriction, whether produced experimentally or occurring during asthma. Finally, the treatment of infections can manifestly be tested only on infected animals or human beings.

Not infrequently the remark is made that the value of a therapeutic measure is determined solely by clinical experience. While I have no desire to contradict this assertion, it should be pointed out that ordinary clinical observations are often extremely difficult to interpret, owing to the vagaries of disease and to the many remedies that are so commonly employed in a single case. The past history of therapeutics warns us that in order to avoid error we need as much assistance as possible from every source. Pharmacology may not, indeed, answer therapeutic problems directly, but at least it aids in their solution. It shows how drug action may be made the subject of accurate study, and the critical attitude which it adopts must be carried over into the interpretation of therapeutic results, if progress in that subject is to be placed on a firm foundation.

On the other hand, pharmacologists could, I believe, be of greater help to those who work in the clinic if they would fully realize how their results may be given a form more suited to clinical needs. What, for example, is the effect of a given drug in small doses, especially when given over a long period of time? How are the effects modified when animals have been made the subject of disease? What pharmacologic problems can be studied on man himself, and especially on patients who are taking the treatment usually given for their disease? Work on such lines as these, whether by pharmacologists or by clinicians, will help to maintain contact between the science of drug action and the art of treatment.

CRITICISMS AND COMMENTS ON THE NATIONAL FORMULARY IV.*

BY JACOB DINER.

In the early days of the Formulary it represented a collection of formulae, gathered more or less indiscriminately from all corners, and endeavoring, in a most laudable manner, to unify, as far as possible, the rather divergent composi-

* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

tions and constituents of preparations of the same name. The book was more in the nature of a reference book, was not official and therefore compliance with its formulae was neither binding on the compounder nor was deviation from formula a violation of and punishable by law. The conception as well as the execution of this book was most commendable and the originators as well as all subsequent workers and revisers deserve the highest commendation from the body pharmaceutical as well as from the members of the medical profession. However, two events have made it essential that this book should not only be a good reference book but that it be the best of its kind, and that it should be scientific and rational to the smallest minutiae. These two events are: Firstly, the passage of the National Pure Food and Drug Act, making the N. F. an official book of standards, and secondly, the ever increasing propaganda for legitimate and rational prescribing. To this may be added a third reason or consideration for care in the compiling and revising of the Formulary.

America and Americans have lived in a land where "milk and honey flowed." The "Horn of Plenty" was pouring out its contents in a seemingly never ending stream and the thought of conservation never entered our mind. The events of the past two years have brought home to us the meaning of the word "Conservation," and it is the duty of every good American individually and collectively to acquire the habit of Conserving and take a few lessons in Thrift. This has been done in the thorough American way with regard to money, food and clothing, and it behooves us to do likewise in the matter of drugs.

I do not by any means wish to advocate the saving of drugs at the sacrifice of health or life, but I do wish to emphasize that many drugs, which have been used lavishly because they were abundant, could well be eliminated or used more sparingly because they are not essential in the treatment of disease, and are badly needed for other important purposes.

Viewing the revision of the National Formulary from these three points we can divide my criticism of some of the N. F. preparations into three classes:

1. Non-essential preparations. By that I mean preparations which merely increase the bulk of the volume, adding neither to "elegant" pharmacy nor to the knowledge and armamentarium of the practitioner of medicine. Among these I might mention such preparations as Acetum Aromaticum and Aqua Phenolata. The first of these, at best, is but a useless toilet preparation hardly known to and rarely employed by either public, pharmacist or physician. The latter merely a 2 percent (approximately) solution of phenol, rarely used in that strength and easily made extemporaneously. Both of these and similar preparations merely clutter up the book, adding to its volume but not to its value.

2. Unscientific preparations. These can be divided into two classes: (*a*) Physiologically incompatible. A very good example of these is furnished by the different elixirs of the bromides.

Albertoni found that bromides lower the excitability of the motor cortex of dogs, so that a stimulation of the motor areas which under the conditions of the experiment gives rise to general epileptiform convulsions, will, after the administration of a bromide, be confined to the area directly stimulated.

Walter A. Bastedo states with reference to Bromides: "On the whole central nervous system except the medulla, there is a moderate but lasting general depression. Bromides have their chief employment as sedatives."

Potter says: "The Bromides are powerful depressants to the nervous system—they lower the activity of the cortical motor area and that of the brain as a whole, * * * * they lower the reflex excitability of the spinal cord," etc.

Stevens, A. A.: "Bromides are used to control convulsions, to allay nervous excitement," etc. Many more authors could be cited; but it requires no quotations to establish the fact that bromides are used as sedatives and anti-convulsants.

Now let us look at the action of alcohol when given in small doses. Quoting from the same authors, we find Sollmann's statement as to the "Stimulant Effects of Alcohol" as follows: These are observed in most individuals after taking "moderate" doses of alcohol. The phenomena are only too well known. There is an increase in the rate of the respiration and of the heart; the blood pressure rises. *There is an increased vivacity of motion, action, and speech.* * * * *

Bastedo, under Alcohol, these (highest faculties) are depressed and there is a certain degree of freedom from restraint, *i. e.*, "there is a breaking of the fetters which keep our animal natures within bounds."

Potter states, "that * * by a moderate dose this entire system (nervous system) is briefly stimulated" * * and again: "Internally in moderate quantity a single dose of alcohol acts briefly as a cerebral, cardiac and general stimulant."

Stevens maintains, "that alcohol first stimulates and then paralyzes all parts of the nervous system."

Personally I have no particular grudge against alcohol. I am neither an advocate of total prohibition, nor do I maintain that alcohol is entirely useless pharmacologically. Neither do I believe in the indiscriminate use of alcohol, especially so when it is given disguised, as in the case of elixirs, and where the "well feeling" so frequently noticed immediately after partaking of alcoholic beverages may lead the patient to an ever and ever increasing use of the drug. I believe, with many other pharmacologists, that alcohol is a depressant to the higher centers. I am in the habit of telling the students that the old-fashioned saying, "alcohol loosens the tongue" is a very accurate and scientific observation. The sense of deliberation and control is gone and, "the impulse rather than the sense rules." Now if we are going to employ bromides for the purpose of allaying hyperexcitability, a condition most decidedly akin to, if not entirely due to loss of control by higher centers, why combine it with a drug which principally acts as a depressant to the higher centers and has indirectly, if not directly, a stimulant effect upon our reflexes.

The only possible excuse that can be made in favor of the elixirs of bromides is that of palatability. But this is not founded on facts. We can present bromides in much more palatable form by the aid of syrup to which a small amount of citric acid is added or by the use of a fruit syrup, especially pineapple syrup.

(*b*) Irrational formulae, good examples of which are furnished by the different liquid preparations of bismuth salts. Of these salts pharmacologists state as follows:

Cushny: "Bismuth acts simply as a protective *powder* with perhaps some astringent properties. It has been found that when swallowed it is at first deposited in the most dependant part of the stomach, but is later distributed evenly over

the surface and forms a continuous sheet over any ulceration, which it thus protects from mechanical injury from the food and also from the chemical action of the gastric juice."

Sollmann states: "The *insoluble* basic bismuth salts are used on inflamed surfaces. They act largely mechanically."

Potter maintains, "that the action of the insoluble bismuth salts is chiefly a local one."

Stevens describes the action as feebly astringent and protective and Bastedo concurs in that view, and adds, "that internally the insoluble bismuth salts are used."

We know from experiments, both in men and animals, that absorption of bismuth salts causes a marked cardiac depression and may lead to other toxic symptoms. Admitting even that the hydrochloric acid of the stomach will precipitate the soluble bismuth salt from its solution, why should we bring it into solution first only to have it precipitated again? Surely the claim of palatability could not be made in favor of the bismuth solutions because bismuth salts are not at all disagreeable to the taste. Why then have a number of bismuth solutions such as Elixir Bismuthi, Elixir Cinchonæ Alkaloidorum, Ferri, Bismuthi et Strychninæ, and many others.

Another class of irrational formulae is represented by the alcoholic diuretics. We know that alcohol is an irritant to the renal epithelium and we also know that constant irritation of the kidney by alcohol leads to degenerative changes What then can be accomplished, in a remedial way, by such preparations as Elixir Buchu with its many variations contained in the N. F.? Is it wise to break away from the old maxim: "Do no harm if you cannot do good."

Lastly, what is the object of the very numerous elixirs of cinchona and cinchona alkaloids? And equally insistent is the question why should we have such a varying dose of strychnine? In the Elixir Cinchonæ Alkaloidorum, Ferri, Bismuthi et Strychninæ we have 0.7 mg. of strychnine sulphate per 4 Cc. dose, similarly in the Elixir Cinchonæ Alkaloidorum, Ferri et Strychninæ, and in the Elixir Ferri Quininæ et Strychninæ. In the Elixir Ferri Pyrophosphatis, Quininæ et Strychninæ we have 0.56 mg. strychnine alkaloid for 4 Cc. dose while in the Elixir Pepsini, Bismuthi et Strychninæ we have 0.7 mg. of the alkaloid and in Elixir Glycerophosphatum Compositum only 0.5 mg. of strychnine glycerophosphate is given in each 4 Cc., but 8 Cc. is recommended as an average dose. I know that my critics will bring up the fact of atomic weight as explanation of the difference in doses. But against this I will say, that cannot explain the difference between the doses of 0.7 mg., 0.56 mg. and 0.5 mg. of strychnine alkaloid. Furthermore, in none of these preparations a very large dose of strychnine is given—would it not be more logical to have all preparations of strychnine and strychnine salts of the same strength, so that the physician could more readily remember how much strychnine he is prescribing?

In conclusion, I want to emphasize the fact that if we would have the physician make use of the National Formulary it behooves us to reduce its volume, simplify and standardize its formulae, and make the book scientifically unassailable.

FORDHAM UNIVERSITY,
FORDHAM, N. Y.

REFERENCES.

Walter A Bastedo, "Materia Medica, Pharmacology and Therapeutics."
Arthur R. Cushny, "Pharmacology and Therapeutics."
Samuel O. L. Potter, "Therapeutics, Materia Medica."
Torald Sollmann, "Manual of Pharmacy and Pharmacology."
A. A. Stevens, "Modern Materia Medica and Therapeutics."

DISCUSSION.

W. L. SCOVILLE: This is the first constructive criticism I have heard on the National Formulary, and it is helpful. The arguments are logical, but unfortunately human nature is not logical, and that is where the difficulty lies. I would like to state a few facts about the National Formulary as a matter of interest. Not in criticism of the paper, because I have none, but there are always two sides to a question. Doctor Diner has criticized the therapeutic action and justly so. In the early stages of the last revision the Formulary Committee made a special effort to obviate just that sort of criticism, and get the therapeutic questions settled. To do so they invited coöperation on the part of the medical societies. The American Medical Association appointed a committee to coöperate with the National Formulary Committee. We had a meeting, and the American Medical men simply said, "You must drop this and that; you must not do this and that." "What can we do?" we asked, and they replied, "Of course it is up to you; you must do so and so." We tried to reason with them, but did not come to an agreement. They were using those preparations and calling for them, and we asked if they did not want them standardized, and the answer was "No, we can not stand for that." Anyway, it came to a stage where we said we did not see how we could coöperate. We parted good friends, but simply had to take the situation as the pharmacists saw it, and did not further attempt to settle the question. The National Formulary Committee can not settle it unless the medical profession can come to a closer agreement.

LIQUOR CRESOLIS COMPOSITUS, U. S. P. IX.*

SUBSTITUTION OF OTHER OILS INSTEAD OF LINSEED OIL IN THIS FORMULA.

BY WILLIAM W. DAVIES.[1]

Our Allies across the seas, and our enemies as well, have found it expedient and necessary in many instances to revise their pharmaceutical formulae to meet the conditions brought about by these war-times. Many of our large medicinal manufacturers have likewise gone over their private and special formulae and made changes which as perfectly well result in the desired therapeutic action of their products. Again it has been suggested from time to time that the Pharmacopoeial Committee should likewise heed the trend of affairs and permit certain variations in their set formulae in accordance with the apparent demand of the times. It may be here stated that the Pharmacopoeial Committee really has already done this very thing as we may note for instance in the formulae of Liquor Cresolis Compositus and Pilulae Ferri Carbonatis (Blaud's Pills) where the potassium salt used may be replaced by the equivalent amount of the cheaper sodium salt.

For the same reason of economy and conservation of supplies, it is the object of this paper to call attention to the desirability of permitting the substitution of Linseed Oil by the proper proportion of other cheaper oils, such as Soya Bean Oil or the like. This substitution will not change the germicidal value of the product since the percent of Cresol would remain the same.

The demand for Linseed Oil in the trades has caused the Government only recently to issue a request for the conservation of its supply. In this particular

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[1] Sergeant 1st class, Medical Department U. S. Army.

formula, therefore, which now consists of 30 percent Linseed Oil, a large saving of both oil and money could be introduced by the Pharmacopoeial Committee announcing permission for a substitution as is suggested above.

This possibility of conservation of Linseed Oil and the attending monetary saving occurred to the writer, particularly in its application to Government contracts for Liquor Cresolis Compositus.

It might be well then to call the attention of the reader to a few figures. The Army Medical Department in the last six months has let contracts for about 250,000 gallons, or at this rate there appears to be at least an annual consumption of 500,000 gallons of Liquor Cresolis Compositus. Thirty percent of this or 150,000 gallons represents the quantity of Linseed Oil necessary to produce these annual requirements. When this subject was under investigation in September, 1918, the *New York Commercial* was quoting Linseed Oil at $1.88 per gallon, making the cost of 150,000 gallons equal $282,000. At the same time other oils were much lower, such as Soya Bean Oil at about $1.20 per gallon, 150,000 gallons of which had a value of about $180,000. Because of the closeness in the saponification value of the two oils mentioned they can be interchanged without altering the proportion of the oil used, hence the replacing of Linseed Oil with Soya Bean Oil at these figures would mean an annual saving of $100,000 and conservation of 150,000 gallons of Linseed Oil, and the product obtained with either oil would be comparable in every respect, physically and germicidally.

It has been found that Corn Oil or mixtures of Corn Oil and Soya Bean Oil may be substituted for either the Linseed Oil or Soya Bean Oil in this preparation.

It appears that the U. S. P. specifications should be appended by a statement giving the names and quantities of other oils than Linseed, which might be used in the manufacture of Liquor Cresolis Compositus.

THE ASSAY OF HYPOPHOSPHITES.*

BY J. L. DICKERSON AND J. P. SNYDER.

For the assay of official hypophosphites, the U. S. P. and N. F. direct that weighed samples of the salts which have been previously dried to constant weight in a desiccator over sulphuric acid be treated with two portions of nitric acid, evaporating to dryness after each addition. The residue is dissolved in water, neutralized with alkali, made to a definite volume and an aliquot portion titrated with potassium sulphocyanate, ferric ammonium sulphate used as indicator. Our experience with the above method has been uniformly unsatisfactory. The results we obtain are low, caused no doubt by the failure of the nitric acid to completely oxidize the hypophosphite to phosphate, and through possibilities of danger of mechanical loss in handling the process. Fairly good results may be obtained by oxidizing the solution of hypophosphite with nitric acid and potassium permanganate and using the double precipitation method with ammonium molybdate and magnesia mixture, finally weighing as magnesium pyro-phosphate. This method is long and tedious, requiring considerable manipulation, and unless great care is used in washing the precipitate of ammonium magnesium phosphate high results will be obtained.

By taking advantage of the fact that a solution of a hypophosphite, when

* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

added to a solution of mercuric chloride, reduces an equivalent amount of the latter to insoluble mercurous chloride and collecting the precipitated calomel, treating this with an excess of iodine and back-titrating with sodium thiosulphate, we have been able to devise a method which works in a very satisfactory manner, gives good check results and takes a minimum amount of time and manipulation. The following is descriptive of the assay:

One gramme of the hypophosphite, which has been previously dried to constant weight in a desiccator over sulphuric acid, is accurately weighed and transferred to a 200 Cc. volumetric flask and made up to the mark with distilled water. When the salt has completely dissolved and the solution has been thoroughly mixed, 20 Cc. are pipetted into an Erlenmeyer flask of about 300 Cc. capacity, 20 Cc. of hydrochloric acid added, followed by 40 Cc. of mercuric chloride solution. The flask is placed upon the steam bath and allowed to remain there with occasional shaking for one hour or until the precipitated mercurous chloride is settled and the supernatant liquid is clear. The solution is filtered, the calomel collected upon a 11 cm. filter paper and washed well with distilled water. The filter paper and contents are transferred to the flask in which the precipitation was made, 3 to 4 grammes of potassium iodide added and 50 Cc. of $N/10$ iodine (75 Cc. in the case of ammonium hypophosphite). Stopper the flask and let stand for about one-half hour, with occasional shaking. The excess of iodine is now treated with $N/10$ sodium thiosulphate, starch solution as the indicator. 1 Cc. of $N/10$ iodine is equivalent to:

Manganese Hypophosphite	0.002538 Gm.
Ammonium Hypophosphite	0.002077 Gm.
Calcium Hypophosphite	0.002127 Gm.
Sodium Hypophosphite	0.0026517 Gm.
Potassium Hypophosphite	0.002604 Gm.

The reaction may be expressed as follows:

$$NaPH_2O_2 + 4HgCl_2 + 2H_2O = 4HgCl + H_3PO_4 + NaCl + 3HCl$$

and in the case of manganese which is divalent

$$Mn(PH_2O_2)_2 + 8HgCl_2 + 4H_2O = 8HgCl + 2H_3PO_4 + MnCl_2 + 6HCl.$$

It is essential that the solution after the addition of the mercuric chloride be heated, or otherwise the calomel will not be completely precipitated. At steam bath temperature, it was our experience that there was no danger of reducing the mercurous chloride to metallic mercury. It is advisable in order to be sure that the reaction has been complete, to return the filtrate to the steam bath and after standing a short while, examine for a further precipitation of the calomel. If this should occur, it is filtered and the precipitate treated as described above.

We have found that it makes no perceptible difference whether the precipitate of mercurous chloride was washed with dilute hydrochloric acid or distilled water. The mercuric chloride solution is prepared by shaking 5 Gm. of U. S. P. mercuric chloride with cold distilled water and filtering. Excellent results were also obtained electrolytically, by determining in this manner the amount of the mercury remaining in the filtrate, a definite amount of a standard mercuric chloride solution being added to the sample of hypophosphite. The mercury is deposited by a current strength of one ampere upon a revolving cathode and required about 20 minutes for a complete deposition. Undoubtedly, although we have not tried it, the residual mercuric chloride could also be estimated by one of the volumetric methods for this substance.

ANALYTICAL LABORATORIES
OF THE
NORWICH PHARMACAL COMPANY.

THE PREPARATION OF FIFTIETH NORMAL POTASSIUM HYDROXIDE.*

BY WILLIAM J. THOMPSON AND J. P. SNYDER.

The directions of the United States Pharmacopoeia under the preparation of $N/50$ Potassium Hydroxide instruct one to prepare this solution by the dilution of either 20 mils of normal potassium hydroxide or 200 mils of $N/10$ potassium hydroxide at standard temperature to exactly 1000 mils. It furthermore states that the titer of this solution be verified by running it against 0.1881 gramme of potassium bitartrate, phenolphthalein being used as indicator. This solution is employed in conjunction with $N/10$ sulphuric acid in the titration of alkaloids with hematoxylin, cochineal, methyl red or iodeosin as indicators. The relative value of the two volumetric solutions should be determined each time, using indicator employed in the assay. The $N/10$ sulphuric acid according to the Pharmacopoeia is standardized against anhydrous sodium carbonate using methyl orange as the indicator. In addition, under $N/10$ sulphuric acid, we read, "This standard solution is employed in conjunction with the $N/50$ potassium hydroxide volumetric solution in the titration of alkaloids, using cochineal, methyl red, iodeosin, hematoxylin as indicators." For this purpose a special experiment should be made in which an accurately measured volume of 10 mils of the $N/10$ sulphuric acid should require 50 mils of the $N/50$ potassium hydroxide volumetric solution at standard temperature for complete neutralization. In analyzing the above methods for the standardization of the solution employed in the titration of alkaloids, the question naturally arises to which should we adjust or factor the solutions, to the $N/50$ potassium hydroxide standardized against potassium bitartrate using phenolphthalein as indicator, or to the $N/50$ sulphuric acid standardized against anhydrous sodium carbonate, methyl orange as indicator.

In truth, the directions of the Pharmacopoeia seem very indefinite on this point and indeed if it is possible to accurately interpret which to use as a basis for adjustment, serious errors may be introduced by switching the solution standardized with a certain indicator to a determination in which another indicator is used. For experience shows that for highly accurate work it is advisable to standardize volumetric solutions against material which will permit of the use of the same indicator used in the determination. But in the case of methyl red which we presume is used almost to the exclusion of all other indicators in the titration of alkaloids, it is not adapted for use with carbonates or organic acids, and as both potassium bitartrate and sodium carbonate fall under these heads, a direct standardization of the solution against these materials, using methyl red as indicator, is impossible. Recently, while in conversation with a gentleman, who had charge of a large laboratory where numerous samples of U. S. P. materials were tested daily, he informed us that he met this condition by disregarding the U. S. P. method of standardization of acid alkali solution, and determined their strength according to the sulphuric acid solution which was standardized by the barium sulphate method.

It is true that in many instances the error introduced would not be serious, as in the case of belladonna leaves or drugs containing about the same proportion of alkaloids, as the error of one percent in the solution would not be sufficient to

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affect the results of two different laboratories working on the same samples. However, in the case of Opium or Extract of Nux Vomica where the alkaloidal content is relatively high, an error of one percent in the solution would introduce considerable difference in the results. It is our opinion that many times the different reports of laboratories when working on the same material may be traced to the different methods used in standardizing the solutions, and it is highly desirable that the Pharmacopoeia should give us very definite instructions as to how the solutions should be prepared and standardized, in order that chemists working upon alkaloidal determinations may all be on the same basis.

While the barium sulphate method of standardizing sulphuric acid undoubtedly yields excellent results, it is rather lengthy, as it requires that the precipitate of barium sulphate should be allowed to collect for at least 12 hours before filtration. We have been able to obtain excellent results by following out the method of G. Incze, *Z. Anal. Chem.*, 56, 177–91 (1917); *J. Soc. Chem. Ind.*, 36 (1917) (of which the following brief description is found in *Chemical Abstracts*, Vol. 2, No. 21, p. 2865):

"Yellow mercuric oxide is a trustworthy substance for use in standardizing acid solutions. It is readily obtained in a pure state, is free from water of crystallization and is not hygroscopic. Its use depends upon the reaction $HgO + 4KI + H_2O = K_2(HgI_4) + 2KOH$. At least 9 molecules of potassium iodide must be added for each molecule of mercuric oxide. In practice, it is advisable to add a somewhat larger proportion of potassium iodide, as for example: Ten mils. of a 60 percent potassium iodide solution to 0.4 Gm. of mercuric oxide. As soon as the mercuric oxide is dissolved in the potassium iodide solution titrate the mixture with the acid solution to be standardized using methyl orange, phenolphthalein, or methyl red as indicator. The yellow mercuric oxide as bought is usually pure, but if desired it can be made by dissolving 100 Gm. of mercuric chloride in 1000 mils of warm water, cooling the solution and then adding 625 Gm. of a 6.4 percent sodium hydroxide solution. The mixture should be well stirred during the addition of the sodium hydroxide. The precipitate is collected and washed until the washings are no longer alkaline to phenolphthalein, air dried and stored in black glass bottles."

We have tested several lots of mercuric oxide and found the substance to be of high degree of purity, all that we examined showing a percentage better than 99.8 per cent of mercuric oxide when determined electrolytically and since this salt may be so accurately determined by the electrolytic method, it is readily possible to know the exact percentage of mercuric oxide in the particular lot used for standardization purposes. In actual practice for the standardization of the acid alkali solutions used in the determination of alkaloids, about 0.2 Gm. of yellow mercuric oxide is accurately weighed and transferred to a beaker. Ten mils of a 60 percent solution of potassium iodide are added and the whole stirred until none of the mercuric oxide remains. When this has occurred, 50 mils of the sulphuric acid, approximately $N/20$, are added and a few drops of methyl red test solution. Sufficient of the potassium hydroxide test solution is run into this from a burette to destroy the last trace of pink color and the amount consumed noted. Similarly, a blank is run against 50 mils of the acid and from the amounts of potassium hydroxide solution used in the blank and the above determination, the strength of the two solutions is calculated as follows:

Let x equal the strength of potassium hydroxide solution in terms of $N/50$.

Let y equal the strength of the sulphuric acid solution in terms of $N/20$.

Let A equal the number of mils of potassium hydroxide consumed in the titration.

Let B equal the number of mils of potassium hydroxide consumed in the blank.

Let C equal the weight of mercuric oxide.

$$\text{Then } x = \frac{0.5181C}{(B-A)\ 0.0011222} \qquad y = \frac{B\,x}{125}$$

Of course, if preferred the liberated potassium hydroxide may be directly titrated by the sulphuric acid and calculations made accordingly.

We have tested numerous alkaloidal salts with solutions standardized by the above methods, and in all cases we have found the results to be correct. We recommend the yellow mercuric oxide as an accurate substance for the standardization of the solutions used in the determination of alkaloids, particularly, as it is adapted for use with methyl red as indicator.

ANALYTICAL LABORATORY
OF THE
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OLEORESIN OF PINUS PONDEROSA.*

BY E. R. MILLER AND E. V. LYNN.

Inasmuch as Schorger had found the oil of western yellow pine to be an excellent source for beta-pinene or nopinene, a barrel of oleoresin was obtained through the coöperation of the Forest Products Laboratory from the U. S. District Forester of California. The steam fractionation resulted in a larger amount of volatile oil of this species than had heretofore been prepared. Hence, use was made of the opportunity to re-examine the oil for its constituents as well as to isolate the nopinene for the special work for which the material had been obtained. The results of the special work on nopinene will be reported elsewhere.

As pointed out by Schorger, the bulk of the oil consists of beta-pinene, however, the presence of alpha-pinene was definitely established by its crystalline derivatives. Attempts to identify other well known constituents of coniferous oils failed, though their presence seemed indicated In spite of the care exercised in the fractionation, the large amount of beta-pinene present in the oil appears to render their purification by fractional distillation difficult, hence the negative results may be accounted for at least in part.

OZONIDES AND PEROXIDES OF THE TERPENES AS THERAPEUTIC AGENTS.*

BY A. V. LYNN.

For a long time the oxygenated constituents of the volatile oils have been looked upon as the bearers of the therapeutic properties of these products, whereas the terpenes were regarded as mere diluents, hence of little or no value. Thus, *e. g.*, the therapeutic, hence the commercial value of eucalyptus oil was determined, according to the U. S. Pharmacopoeia, by a cineol assay. The faith in this doctrine has, of late, been thoroughly shattered by the clearer recognition of the

* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

therapeutic importance of the products resulting from the oxidation of the terpenes with either atmospheric oxygen or ozone. What the effect of the pure terpene, devoid of any added oxygen, may be has apparently received less attention. Indeed, it might be difficult to ascertain such action, since these hydrocarbons are now known to possess a great avidity for this element, which constitutes an important part of the atmosphere in which the animal and human organisms live upon whom the experiments must be conducted.

For a rational consideration of the entire subject it is necessary to differentiate, first of all, between the ozonides, the products of the action of ozone on the terpenes, and the peroxides, the products of the action of atmospheric oxygen on these mostly unsaturated hydrocarbons. Secondly, it should be recalled that, in either case, the addition reactions are by no means simple, *i. e.*, they do not necessarily run their course in one direction. Thirdly, it must be remembered that these addition products are very unstable, on which property their therapeutic value largely depends, yielding other oxidation products with the excess of terpene, and that all of these reactions are readily modified by differences in temperature and other conditions.

As a matter of fact, we know as yet so little about the chemical products that result from the initial addition of oxygen to the terpenes and the subsequent rearrangements of the labile oxides, both ozonides and peroxides, that the literature on the entire subject is apt to prove confusing rather than enlightening. Hence, a survey of the entire field, pointing out the difficulties as well as those phases of the subject which may be comprehended, at least after a fashion, seems desirable at the present time. This would seem true if for no other reason than to guard against exploitation by those who are interested commercially rather than scientifically.

CAMPHENE IN HEMLOCK OIL.*

BY E. V. LYNN.

A pinene fraction obtained from commercial hemlock oil, which had been used several years ago by the class in phyto-chemistry for the purpose of isolating borneol after the saponification of the oil had been effected, had been submitted to the action of dilute potassium permanganate solution by Mr. Max Phillips in an attempt to prepare pinene glycol. The unoxidized portion had been recovered by steam distillation and was used in an attempt to prepare optically active pinene nitrosochloride. After the inactive nitrosochloride had been filtered off, the mother liquid was set aside to allow the optically active addition product to separate. However, in place of the active nitrosochloride, crystals were obtained which had a camphor-like odor and which melted at 42°. Borneol, however, melts at about 203° and camphor at about 175°, whereas camphene melts at about 49°. Its identity with this hydrocarbon was established by converting it into borneol, m. p. 204°, by the Bertram-Walbaum hydration reaction. Camphene had not previously been identified in hemlock oil.

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* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

TEACHING PLANT CHEMISTRY.*

BY NELLIE WAKEMAN.

The subject of this paper is sufficiently broad to cover a number of papers of the necessarily limited scope of this one. Indeed, volumes might well be written upon the subject without exhausting it, for the subject would develop as it was discussed, continually presenting new phases for discussion, being practically unlimited.

Three main lines of thought, however, present themselves when the subject is considered briefly, (1) the value of the subject; (2) the materials for study; and (3) the methods of presenting the subject. It is my intention to touch upon the first two lightly, devoting the greater portion to the teaching of plant chemistry as it is actually carried out at the University of Wisconsin.

There can be no question of the importance of plant chemistry. The world is beginning to realize the importance of chemistry in general and of the chemist. Never have we heard so much of the value of chemistry as during this war. Numbers of papers have been written and addresses made upon "Chemistry and the War," and we all realize that though eventually the war will be won by the side that can put the largest armies of trained men into the field, yet the armies of to-day would be practically powerless without the chemists back of them.

We are all familiar with the slogan "Food will win the war," and when we stop to think of it we recognize our dependence upon the little chemists of the wheat fields, the sugar plantations, the cotton fields, and all the other fields, where, all unnoticed, there is happening the ever recurring miracle beside which the miracle of the loaves and fishes fades into insignificance, the daily miracle of the conversion of air and water into food for all living things. A simple chemical reaction it appears, $6CO_2 + 6H_2O = C_6H_{12}O_6 + 6O_2$. Our eyes are holden and we see no miracle. But, if Germany had mastered the mysteries of this reaction, the combined armies of all the world could scarcely hope to bring her to her knees; if England had mastered it, all the U boats that could ever be built would never be able to starve her out; and if we had mastered it, we would not now be limited to black bread and two pounds of sugar a month. No, there is no question of the importance of plant chemistry; but it has been neglected.

Important as the subject is in general, it is of especial interest to pharmacists for two reasons, (1) so much of our materia medica is derived from plant sources, and (2) so many of the advances hitherto made along plant chemical lines have been made by pharmacists.

The material for study is inexhaustible, both for practice and for research. Every plant drug of the Pharmacopoeia, every weed by the wayside, may be made to serve as material for some line of experimentation or investigation. The subjects open for investigation are almost as varied as the material obtainable. Moisture, ash, enzymes, carbohydrates, resins, oils, alkaloids, tannins, pigments, proteins, these are some of the larger classes of subjects, any one of which will furnish valuable experience for the beginner or a lifetime of work for the investigator.

For a good many years, how many I don't know, a three-credit course in plant chemistry, throughout the senior year, has been required of students in pharmacy

* Read before Section on Education and Legislation, A. Ph. A., Chicago meeting, 1918.

at the University of Wisconsin. This course, as the catalogue states, is supplementary to pharmacognosy, which is given as a two-credit course at the same time. The two courses together are designed to give the student as thorough a knowledge as possible, in the time available, of the U. S. P. plant drugs and their constituents. The course in plant chemistry is divided, somewhat arbitrarily, into two parts, the work of the first semester being of such a character that a knowledge of advanced organic chemistry is not required, while in the second semester definite chemical compounds, requiring more chemical knowledge, are studied. This division is necessary in our work at Wisconsin, because a large portion of the class is always made up of students of the two-year pharmacy course who are at this time but beginning the study of organic chemistry. According to this division, the work of the first semester is devoted principally to the isolation and study of constituents that are more or less natural mixtures. The old-time grouping of plant constituents is followed: oleoresins, resins, volatile oils, etc. Starch is isolated from potato; the fixed oil of almonds is prepared; oleoresin of pepper is made and piperin separated from the oleoresin; the distinction between a natural and a galenical oleoresin is noted and a nature oleoresin such as balsam of copaiba is separated into its constituent resin and volatile oil. A study of the water content of plants and drugs is also made and the rôle water plays in the biochemical processes of the plant, photosynthesis and enzyme action, is studied, as well as the significance of water in the curing of drugs.

A considerable amount of quantitative work is done during the first semester. Moisture and ash determinations are made; the saponification and acid numbers of resins and fixed oils are found; and iodine absorption numbers are determined.

Throughout the first semester all material isolated that would serve as illustrative material for the study of definite chemical compounds during the second semester is carefully saved. In this way the continuity of the work is preserved and the interest increased. Thus, the marc from which the fixed oil of almonds was obtained serves for the isolation of amygdalin when carbohydrates and glucosides are studied; and the piperin removed from the oleoresin of pepper furnishes material for an interesting set of experiments when the subject of alkaloids is reached.

During the first part of the second semester considerable time is devoted to the study of volatile oils,—not merely because the volatile oils are in themselves interesting and important pharmaceutical products, but because nowhere else in all the realm of chemical materials is there so readily available material illustrative of so many important organic reactions. Here we find saturated and unsaturated hydrocarbons, alcohols, acids, esters, ethers, aldehydes, ketones, and phenols in a form convenient for study. This work is placed at the beginning of the second semester because it has been found that at this time the students, who have just completed a five-credit course in organic chemistry, are benefitted by a review of the principal organic reactions, before they have had time to forget them, and also because much of the work upon volatile oils can be carried out most advantageously, especially by beginners, when the weather is cold.

During this semester, as in the preceding one, plant products are studied as members of more or less natural groups, carbohydrates, glucosides, tannins, pigments and protein products follow the volatile oils, being taken up, so far as possible,

from the standpoint of composition. In all of this work pharmaceutical materials are used, so far as practicable, for illustrative and experimental purposes. This choice of material is governed more by pedagogic than pharmaceutic reasons, the students being ordinarily most interested in pharmaceutical materials. Whenever the point in question could be better illustrated by material other than pharmaceutical, however, there is no hesitancy about introducing it. In any case, whether pharmaceutical materials are used or not for purposes of illustration, the aim is always to make the reaction as broad in its application as possible. For while it is good for a student to be able to find the ester and the alcohol content of oil of peppermint for example, it is better for him to know that a chemical principle is a natural law and that the principles of condensation and hydrolysis involved in these reactions are always the same whether they apply to the making of soap, the manufacture of perfumes, of collodion, of dope for airplane wings, of artificial silk, or any other of the countless similar reactions which take place in the laboratory, the manufactory, the plant organism, and our own bodies.

The work of the classroom and the laboratory are carefully correlated; and the students are encouraged to read as widely as possible. To facilitate this reading a list of references, together with suggestive questions and topics for discussion, follows each chapter of the "Guide" with which the students are provided. This list is supplemented by reference to timely subjects, usually made orally in the classroom or laboratory, and afterwards posted on the bulletin board. A collection of selected books is kept for ready reference in a small reading room contiguous to the laboratory; for though the students are encouraged, and even required, to constantly consult books in the general and departmental libraries, much time is saved by keeping some of the most useful where they may be readily available during the short periods of waiting which inevitably occur in every chemical laboratory. Another small collection, chiefly duplicates of books in the general library, is to be found in the instructor's office. These books are loaned to the students upon request. This has proved to be one of the most effective methods for securing the desired reading. Whether or not the student selects these particular books in order to advertise to the instructor his interest in the subject is immaterial. The desired end is accomplished and the student reads. Even if he reads but little, he handles the book, carries it home, knows what it is about and where he can find information on the subject. This is perhaps, after all, the main thing, for it is much more worth while to know where to find a great deal of information upon a large number of subjects, than to have our minds crammed to their limited capacities by facts about a few things. The educated man or woman has better use for the brain than making it a store house for facts. An encyclopaedia is better and more reliable for that purpose.

An important part of the work of this course is the note book work. The note book is kept in two parts, one devoted to laboratory experiments and the other to the answering of questions and the discussion of topics suggested by the Guide. The reading of note books, though something of a drudgery, should not be neglected, as it is one of the best methods for determining whether or not the students are getting what they should from the course. Furthermore, since the note book is the student's best, and most frequently used, book of reference, it should be carefully corrected.

The course in plant chemistry, as a whole, has been found most useful. It is interesting; it is practical from the standpoint of both chemistry and pharmacognosy, and it carries with it more of general culture than almost any other course in the curriculum.

ALCOHOL—ITS FUTURE.*[1]

BY A. B. ADAMS.[2]

One of the subjects uppermost in the mind of the pharmacist to-day is alcohol. It is immaterial whether he is a large manufacturer or a small retailer. He wonders—how he can get along at present; what has the future in store?

Less than a year ago, with the suddenness of a bursting bomb, the prohibitionists won a great victory, and the manufacture of beverage spirits ceased. As alcohol is necessary for manufacturing purposes, regulations were issued by the Internal Revenue Department, under which non-beverage spirits could be obtained. These regulations are undoubtedly not perfect, and it will take years to make them so—if ever. To the pharmacist who was accustomed to buy and sell alcohol (and the vast majority never knowingly sold it for beverage purposes) it seemed an invasion of his rights to say that he has got to give bond, etc., can only sell at retail the medicated articles, regardless of the fact that the physician may not like any of the formulae for rubbing purposes. The physician, in turn, thinks he is abused when he cannot get a small quantity of the pure ethyl alcohol, for a specific purpose, without giving bond.

The manufacturer must be careful that all the private formulae he compounds conform to his sworn statement as regards medication. All of this is decidedly harassing. But these are harassing times and we all must put our shoulders to the wheel and help. Some of you have probably complained because your permit was refused or delayed for some reason; but see the other side—that of the other humans just like yourselves who have been directed by Congress to enforce the law of October 3, 1917.

One application was made by a duly credited physician to the Collector of Internal Revenue for ten gallons of alcohol and ten gallons of whiskey with which to treat his patients, "and please hurry the permit for the whiskey." A sanatorium made application for spirits which was to be used untreated for their patients. Such a place would soon have been doing a large business if the permit had been granted—which it was not. This is something of the other side. If we are to have National Prohibition after the war, and personally, I believe we are, then non-beverage alcohol is with us to stay. The thing for each to do is to try to the best of his ability to obey the spirit of the law and assist the Commissioner of Internal Revenue in the proper carrying out of the law given him to enforce.

Alcohol is necessary to the pharmacist. Sometimes he is able to make something else do fairly well, but that is about all. Tincture of Jamaica Ginger has been

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* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

[1] Mr. Adams desires it to be understood that any expression in this paper is his personal opinion, and not an official one. This paper was written before the war had ceased, therefore some statements are not applicable to present conditions; there are, however, suggestions embodied which may prove of value.—EDITOR.

[2] Chief Chemist Internal Revenue Bureau.

used as a beverage, and will be; Lemon Extracts have and will, but because a few perverts out of 10,000 normals satisfy their craving for intoxicants by such means, should we prohibit the manufacture of such preparations? I say *no*, but such preparations should be made *standard* in order to reduce the chance of improper use, and the seller of such preparations should keep his eye on his sales to see that they are not abused. Why you ask?—Because if you, as legitimate users of alcohol, do not want more restrictions put upon you, then keep your use and sale of alcoholic preparations clean. If necessary, be more strict. In compounding a tonic, don't try to see how little medication you can put in, but use sufficient so that criticism will be reduced to the minimum.

It is of course needless to say that as long as a drop of alcohol is sold there will be demands to stop it, but careful supervision on the part of the pharmacist will disarm many such objectors and the real mass of the people will be satisfied.

DENATURED ALCOHOL.

The restrictions placed on non-beverage alcohol have caused many to turn to denatured alcohol. Congress undoubtedly intended that industrial users of alcohol should, wherever possible, receive the benefits of alcohol free of tax. That more users do not apply I believe is due to a misunderstanding.

It is probably questionable as to whether the Commissioner of Internal Revenue would approve the use of denatured alcohol in preparations intended for internal use, although the same might be poisonous, as Tincture of Nux Vomica; the reason for such refusal being as to where to draw the line, but there are undoubtedly many other preparations, such as liniments, cold creams, and similar semi-paste toilet articles for which, if the question were properly presented to the Commissioner of Internal Revenue, permission might be granted for the use of denatured alcohol. Of course, in cases such as this, the manufacturer would want to use a specially denatured alcohol, and would be required to give a bond, to store the material in a certain place and follow some few restrictions. As soon as the formality of the bond and the restrictions are understood, it is found that such procedure is not the nightmare that it first appeared to be.

The ideal denaturant has never been discovered, and I believe the present time to be an ideal one for manufacturing pharmacists to get together to see if they could not arrive at some denaturing material which would render the alcohol unpotable and still leave it efficient for such technical uses.

Leaving out of consideration the additional internal revenue tax, alcohol is no higher than other commodities at the present time. Vast quantities of alcohol are used in the Munitions Industry in the production of nitro-cellulose and other war necessities. As soon as the war ceases, the manufacture of such materials will automatically cease. Such alcohol will then be available for the arts and naturally the price will tend to return to normal, unless, of course, the revenue taxes remain. I think alcohol in the future should be more plentiful than it has been in the past six months, because there are unlimited quantities of molasses in Cuba, and, if the "bottoms" are available, it could be easily transported into this country. Therefore, there seems no reason to be worried about the supply. The cost of non-beverage alcohol of course will be high as long as the revenue taxes remain on it. As to the probability of such taxes being removed, you are in just as good position as I am to judge. We all know that the Government is obliged

to raise immense sums of money by taxes, and it is the rule to keep taxes on such products as have been taxed in the past.

For these reasons, I firmly believe, as previously said, that the manufacturing pharmacist should look to denatured alcohol as the solution to one of his problems. Of course, in the preparation of his tinctures, etc., such use will probably not be granted, but there are vast quantities of alcohol used for extractive purposes and for the manufacture of semi-solid articles, which I believe are entitled to the privileges of the tax-free article.

PRONUNCIATION OF PHARMACEUTICAL LATIN.*

BY A. B. STEVENS.

Much confusion exists in the pronunciation of pharmaceutical Latin terms. There appears to be no uniformity among teachers or text-books. Some follow the Roman system, others the English and many in actual practice use a mingling of the two systems. High schools and colleges universally teach the Roman system. Teachers of pharmacy naturally look to text-books on Pharmaceutical Latin for correct pronunciation. But comparison of such text-books shows a marked difference in practice among authors. For instance, Robinson's "Latin Grammar of Medicine and Pharmacy" uses the Roman system. Dr. O. A. Wall in his "Elementary Lessons in Latin" does not state which system he uses, but from the sounds given letters it is evident that he uses the Roman System. The same author in his excellent work on "The Prescription" devotes 72 pages to the use of Latin in medicine and pharmacy, but the only reference he makes to pronunciation is found in the foot-note on page 127 in which he very aptly states:

> Incidentally it may be remarked that it is absurd to give scientific nomenclature, derived largely from modern English words, the pronunciation which was supposedly used by Cicero for the Latin he spoke 2000 years ago.

In another text-book, "Pharmaceutical Latin" by Hugh Muldoon, the author gives both the Roman and the English systems, but states that:

> Though the latter system is recommended as being the more practical because of its similarity to English, it will be found that many prominent men in the profession use the Roman method, perhaps more generally a mingling of the two..... It is much more important for a pharmacist to be able to interpret a prescription correctly than it is to be able to pronounce in a faultless manner the Latin contained therein.

Dr. M. L. Neff, in his book on "Prescription Writing" does not allude to the pronunciation of Latin.

Clothers and Bice in their "Elements of Latin for Students of Medicine and Pharmacy" have the following to say regarding the pronunciation of Latin:

> Latin is now pronounced differently in different countries. English-speaking people use either the Roman or the English method, the Roman being the one preferred by scholars generally. In this book the English method will be used as that prevails in medicine and pharmacy.

Other text-books on pharmacy, such as:

"Principles of Pharmacy" by Arny, "Treatise on Pharmacy" by Caspari, and "Practice of Pharmacy" by Remington, all devote considerable space to pharmaceutical Latin but do not give anything on pronunciation.

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* Read before Section on Education and Legislation, A. Ph. A., Chicago meeting, 1918.

The writer in his "Manual of Pharmacy and Dispensing" followed the English method.

From the preceding it is evident that there is a decided lack of uniformity in the pronunciation of medical and pharmaceutical names. The principal argument in favor of the Roman method is the fact that it is taught in our public schools. This would be a strong point in its favor, if the majority of those who study pharmacy were Latin students, but many of our high school graduates have not studied Latin and those who have are not strict in the use of it in the pronunciation of medical and pharmaceutical terms.

The English method is more easily acquired by English-speaking people but the strongest argument in its favor is the fact that, with one exception, the English method is used by botanists in the pronunciation of botanical names of plants. One of the first subjects studied by a pharmacy student is botany, in which he becomes familiar with the names of many drugs. How absurd and impractical it would be for a pharmacist to use one system in the pronunciation of botanical drugs, and another for the preparations made from them, and also for inorganic drugs. Under such conditions is it any wonder that those who try to use the Roman method naturally fall into the habit of mingling the two methods?

It seems as though this is a question of great importance to the study of pharmacy, and one that should be discussed, and if possible settled by the Section on Education.

From the preceding it must be evident that I am in favor of the English method. However, I would not so strongly object to the universal adoption of the Roman method if the botanists would adopt that method, but that is practically hopeless as they are a very large body of men, and practically united on the English system.

DISCUSSION.

BERNARD FANTUS: We need an authority on this subject to which reference can be made. It is most lamentable that there is no agreement relative to the pronunciation of medical and pharmaceutical terms among teachers. Students may hear Dig i tā lis or Dig i tă lis; Hy os cy á-mus or Hy os cy a mus; Sco pol ám ine or Sco pol am ine. Now which is correct, and how should we pronounce not only the Latin but also the English names of drugs? I take it in our ordinary conversation we use the English names rather than Latin names. I have great difficulty in getting authority on the pronunciation of English names of drugs. Further than that, I find it difficult to get authority on proper spelling. Especially does it seem that the proper spelling of the newer drugs is quite diversified, and it is difficult to get authoritative decisions. I have appealed, for instance, to an author of a text-book on Pharmacology for decisions on questions of this kind. He answered, "Everybody spells the way he pleases." When you look through this author's book you will find that is so. There is absolutely no system on spelling that he carries through the book.

There is this thought also that comes to me: Who should be the ultimate authority on the spelling of medical terms? Is it not the Pharmacopoeia? If so, who looks after the orthography of the Pharmacopoeia? The question of, for instance, the introduction of spelling reform is one that I believe a serious one. Take the words ending in *in* and *ine*. Those of us who are allied with the Pharmacopoeia ought to stand by it. For instance, when I write an article for publication in a medical journal, and use the *ine*, they scratch off the *e*. I believe this is an important topic for teachers.

THE PREPARATION OF TINCTURES BY THE DILUTION OF FLUID-EXTRACTS.*

BY EDWARD D. DAVY.

It is not uncommon, in fact it is a common practice among pharmacists to prepare tinctures needed from time to time by dilution of fluidextracts. In some cases this procedure is warranted, as may be seen by taking into consideration the percentage of alcohol in either preparation and also the solubility of the active agents in varying strengths of alcohol. When tinctures are needed for immediate use, or for those which have a limited demand in everyday practice, they are commonly made from the fluidextract without considering the result of such dilution. Fluidextracts are usually at hand, and dilution of them therefore is an easy method for making tinctures on short notice, but the resulting preparations of some of these are questionable. A few examples will suffice to make clear the result of this procedure.

Fluidextract of Aconite has an alcoholic menstruum composed of three volumes of alcohol and one of water, or 71% alcohol, while that of the tincture has seven volumes of alcohol and three of water, or 66.5% alcohol. The difference in alcoholic strength of the two menstrua is not so striking as in other cases and, since the activity of the preparation is dependent on the alkaloids present, the dilution of the standardized fluidextract may be used to advantage and in this case would not throw out of solution any of the active agents with so small a change in the alcoholic content.

In the preparation of Tincture of Cannabis from the fluidextract there could be no serious objection to the common practice of dilution, inasmuch as the alcoholic content in the two preparations is the same.

In preparations of Calumba the activity is due in part to a small alkaloidal content, also to gum and resin. The fluidextract U. S. P. VIII contains 66.5% and the tincture 57% alcohol. It will readily be seen why in this dilution, involving the solution of gum and resin, a precipitate forms so that the resulting preparation does not represent the extractive matter obtained in a tincture made by the usual method.

In the Fluidextract of Cinchona U. S. P. IX the menstruum contains hydrochloric acid, while that of the tincture has none. It would be manifestly unfair and unwise to make a tincture whose alkaloids should be as such in combination with their organic acids, from a solution the alkaloids of which are in the form of hydrochlorides. In the preparation of Fluidextract of Lobelia, acetic acid is used in the menstruum and since this tincture as well as that of cinchona are commonly used in compounding, the presence of acid might greatly impair the value of subsequent mixtures in which they were used.

In the Fluidextract of Belladonna the menstruum is 76% alcohol while that of the tincture is about 49% and the result of dilution is the formation of considerable precipitate which can be overcome only by making the dilution with approximately 76% alcohol. It is obvious that this method would work in most every case but the tincture would be unlike the *official* preparation.

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918.

It has been a common practice, and still is to some extent, to prepare the tincture and also the infusion of Digitalis from the fluidextract regardless of the fact that all the recent investigations show digitalis preparations lose their efficiency to a greater or less extent with age. The medical profession in general is insisting on a fresh tincture and also the freshly prepared infusion, and the Revision Committee of the U. S. P. IX endorses the idea. This is shown by the absence of alcohol in the infusion which acted merely as a preservative and allowed for its keeping a greater length of time.

In the Fluidextract of Rhubarb the menstruum is 76% alcohol while that of the tincture is 49%, a difference of 27% in the two menstrua. The active constituents of rhubarb are largely resinous matters and cathartic acid. On diluting the fluidextract with a 49% alcohol and glycerin menstruum, considerable deposit forms in forty-eight hours which increases with time until its maximum is reached. Glycerin tends to prevent the precipitation but does not entirely overcome it.

In fluidextracts one cubic centimeter represents the extractive matter from one gramme of drug, but in very few cases do we actually get all of the extractive matter from the evaporated percolate in solution. The extractive being largely, if not wholly aqueous, is incorporated with the first percolate whereby its alcoholic strength is lowered and a deposit results. Fluidextracts if made by the same process will be quite uniform and they present the best means now available for administering drugs in concentrated form, but in no way do they represent other preparations when diluted.

Excluding the tinctures of Iodine and Ferric Chloride there are 20 official tinctures wholly or partly dependent on the alkaloidal content for their activity, while 32 are dependent on glucosides, resins, oils or acids. If one follows consistently the last named tinctures when made from fluidextracts, it will be found that in nearly all cases where the alcoholic content is made that of the Pharmacopoeia a decided precipitation occurs with the exception of those in which there is no change in menstrua. Squills present an exceptional case in that the tincture has a higher alcoholic content than the fluidextract but in this case a deposit results from a dilution. In all these cases it remains to be proven that the precipitated matter is inactive in those drugs dependent on gums, resins or glucosides for their activity.

It will be noted that in fluidextracts one has in many cases a product nearing saturation and a menstruum varying from 0% to 27% in alcohol from its corresponding tincture. The tincture in most cases represents only 10% of the drug thereby making the extraction more complete and retaining in solution all of the extractive since it is completely dissolved in the menstruum used. It is true that some tinctures under ordinary working conditions will precipitate on long standing due to evaporation or effect of light and heat, conditions over which we have no direct control, leading some to believe it to be due to the same cause in either case.

In conclusion it might be said that Pharmacy has been greatly drawn from its original course by too many "ready to use" preparations. It is the aim of everyone to bring it into a professional rather than wholly commercial light, and also to eliminate many so called "short cut" methods imposed on the profession, thereby taking the initiative from the individual. If any dilutions as above mentioned

are made the individual preparations should be thoroughly studied before making such dilutions, and a procedure other than this must be considered a very poor one to follow.

DISCUSSION.

CHARLES H. LAWALL: The evident care with which the statements were made in the paper and conclusions drawn appear to me to be very worthy of widespread publication to the pharmaceutical profession. This investigation goes to show that we are moving in circles, in a way. I do not mean to detract in any way from the value of the paper by that remark, but I am reminded of discussions on this subject in 1895. The conclusions reached at that time were practically the same as the conclusions reached in this paper. We believed then, and still believe, that the manufacture of pharmaceutical preparations requires a certain amount of attention, care and skill.

WILLIAM GRAY: In the first eight hundred mils of fluidextract percolate we may assume that it is saturated with the active constituents. When the last percolate is evaporated it becomes a more or less aqueous product. When this is mixed with the first percolate the strength of the alcohol is reduced and consequently there is a precipitation.

C. M. FORD: The manufacturers of fluidextracts age their preparations by allowing them to stand for some time, so that insoluble matter is precipitated.

R. W. TERRY: They obtain a preparation of better appearance but may not invariably represent the drug. The finished product, however, in most instances, is standardized.

HENRY P. HYNSON: I can go a little further back on this subject than Professor LaWall. I regard the paper of great importance because it touches upon a subject that is not yet settled. I want to ask him if he knows whether the propaganda started a few years ago, to have fifty percent extractions take the place of tinctures and fluidextracts, has made any progress.

CHARLES H. LAWALL: No, because after all it is a matter of educating the physician. If the physicians ever become acquainted with the value of fifty percent preparations and learn to prescribe them, then we should admit such preparations to the Pharmacopoeia.

R. W. TERRY: In the preparation of Tincture of Capsicum the effect of different strength alcohol is very nicely shown. If all the menstruum is not made up at one time and a further amount of menstruum is made up to finish the percolation, and there is even a slight variation in alcoholic strength, the percolate comes through cloudy or milky.

H. P. HYNSON: There does not seem to be any reason why we should have fluidextracts and tinctures of variable strength. I want to ask the Chairman of the Committee of Revision of the U. S. Pharmacopoeia if he does not think the propaganda for "50 percent tinctures" should be continued. I want to leave that thought with you.

A NOTE ON TINCTURE CINCHONA COMPOUND.*

BY F. W. NITARDY.

The U. S. P. directs Tincture Cinchona Compound to be made by percolating a definite amount of red cinchona, bitter orange peel and serpentaria with first a definite amount of hydro-alcoholic menstruum containing some glycerin, completing the percolation with a plain hydro-alcoholic menstruum and adjusting the tincture so that each 100 mils will assay 0.45 Gm. of cinchona alkaloids.

In the practical application of this formula, it has been found that the finished tincture will sometimes assay 50 percent or more above the specified strength (due to cinchona bark of high alkaloidal strength). The subsequent adjustment of this tincture to U. S. P. strength produces a product that contains less bitter orange peel, serpentaria, and glycerin than would be present if the cinchona used

* Presented before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918.

does not assay much above U. S. P. strength, thereby defeating one of the principal objects of official standards for preparations, namely uniformity.

A preparation made in two portions, the first representing one-half the volume of the finished tincture and containing all of the bitter orange peel and serpentaria, the other representing the red cinchona adjusted to proper strength (double that of the compound tincture), and these mixed in equal volumes, would produce a product that would be more nearly uniform in all its ingredients than one made by the present process, regardless of any adjustment necessary for obtaining proper alkaloidal strength.

The official formula, if changed as above described, would read as follows:

Red Cinchona, No. 40 powder	200 Gm.
Bitter Orange Peel, No. 40 powder	160 Gm.
Serpentaria, No. 60 powder	40 Gm.

Prepare 950 mils of Tincture by Type Process "P" as modified for assayed tinctures (see U. S. P. IX, page 444), from the red cinchona, and prepare 1000 mils of Tincture by Type Process "P" from the bitter orange peel and serpentaria, using as the first menstruum for each, a mixture of 75 mils of glycerin, 675 mils alcohol and 250 mils of water, completing the percolation in each case with a menstruum of two volumes of alcohol and one volume of water. Adjust the Tincture prepared from cinchona so that each 100 mils will contain 0.9 Gm. of cinchona alkaloids, using a mixture of glycerin, alcohol and water in the proportions of the first menstruum for this purpose. When finished, mix equal volumes of the two tinctures so prepared.

If thought more desirable, the two steps may each be given as separate preparations, and the compound tincture directed to be made by the mixing of equal volumes.

SPIRIT OF PEPPERMINT, U. S. P.*

BY E. F. KELLY.

The collection of samples of this galenical throughout the State of Maryland by the Board of Health for examination and the resulting prosecution of several pharmacists under the State Food & Drugs Act on account of variations in its strength, have called attention to some facts about this preparation that may be of interest here.

In the first place, it was not generally known, it seems, that the U. S. P. now recognizes Essence of Peppermint as an official synonym for the Spirit, and some dealers were marketing an off-strength preparation as Essence of Peppermint under the assumption that they were not amenable. Secondly, there is no official standard set up by the U. S. P., even as far as directing in the official formula, that a certain finished quantity be made, and this is also true of Spirit of Spearmint.

The official directions are to macerate 10 Gm. of peppermint in 500 mils of water for 1 hour, and express strongly. Mix 800 mils of alcohol with 100 mils

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918.

of oil of peppermint, add the macerated leaves and enough alcohol to make 1000 mils, macerate for 6 hours and filter.

The failure to direct the addition of sufficient alcohol through the filter to give 1000 mils was doubtless an oversight as this procedure is directed in the formulas for making all of the official spirits, with the exceptions of peppermint and spearmint and aromatic ammonia, and was directed in the U. S. P. VIII for those of peppermint and spearmint. The peppermint displaces a certain volume and this displacement, with the evaporation of alcohol in filtration, causes a loss of approximately six percent in volume, as found by several experiments. No doubt many who prepare this spirit will, through habit, make up the volume after filtration with alcohol, causing a corresponding deficiency in strength in the finished preparation.

Careful examination of Spirit of Peppermint U. S. P. shows that it contains approximately 10.6 percent of oil of peppermint and not 10 percent, as commonly understood. This higher percentage of oil is the result of the loss in volume before referred to, and checks, as will be noted, with the 6 percent loss in volume.

The question as to the correct legal standard, that may be raised under such conditions, demonstrates the importance of having all official formulas direct, whenever possible, a finished quantity either by weight or volume, or a definite number, particularly, when no other requirement is made.

STERILIZED DISTILLED WATER.*

BY E. FULLERTON COOK AND LOUIS GERSHENFELD.

The U. S. Pharmacopoeia IX introduced a process for preparing sterilized distilled water and it is assumed that any trained pharmacist is now prepared and able to furnish that official product on demand.

The directions of the U. S. P. seem simple and without complications, and without experience the druggist may feel that it is an easy task to prepare sterile water and dispense it on order.

Those, however, who have had experience in the making of sterile products, especially when apparatus must be adapted for the purpose and the work conducted under drug store conditions, know the difficulty met with, and the likelihood of failure. If an autoclave is available, its use would always be preferred to the official method, as it insures sterility, but since this is frequently not at hand, especially in a pharmacy, this paper was undertaken to prove the efficacy of the official process of the Pharmacopoeia, that is, boiling in a flask, and also to show the necessity for the most extreme caution, if success is to be attained by this method.

The Water Required.—The Pharmacopoeia directs the use of "freshly distilled water" for sterilizing. This preliminary requirement must not be ignored, since distilled water, even though but a few days old, will be teeming with bacterial life and if sterilized, would contain the dead organisms, and thus produce a "bacterin." It would also contain the toxins produced in the water during the life of the bacteria and such a water, if used as the solvent for a substance to be used as an intravenous or subcutaneous injection, would produce systemic effect and might cause serious consequences from the introduction of foreign proteid.

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918.

TABLE I.—EXAMINATION OF WATER FOR STERILIZATION.

	Fermentation Test.	Incubation on agar plates after standing			
		1 day.	4 days.	7 days.	10 days.
1. Tap Water from 145 N. 10th St., Phila. collected in sterile container after running for 5 minutes	Negative	About 120 colonies per mil	+	+	+
2. Tap Water, distilled as directed by the U. S. P. IX, using Liebig condenser, and collected in a sterile flask, under cover	...	Slight growth, a few isolated colonies per mil	+	+	+
3. Distilled water, collected directly from Stokes Automatic Still, in a sterile flask	...	Slight growth as in No. 2	+	+	+

TABLE II.—STERILIZATION OF WATER.

	Incubation on agar plate after standing				
	1 day.	4 days.	7 days.	10 days.	14 days.
4. Distilled water No. 2—boiled for 30 minutes in sterile hard-glass flask, stopped with cotton. (U. S. P. IX method)	Sterile	—	—	—	—
5. Distilled water No. 2—boiled for 30 minutes in sterile glass flask closed with sterile rubber stopper and tubes (see Fig. 1)	Showed several isolated colonies per mil*	+	+	+	..
6. Distilled water No. 2, contained in a sterile hard-glass flask stopped with parchment paper, and heated in Arnold steam sterilizer for 30 min.	Showed several isolated colonies per mil	+	+	+	..
7. Distilled water No. 3—boiled for 30 minutes in a sterile hard-glass flask stopped with cotton. (U. S. P. IX method)	Showed only one colony	1 colony	1 colony	1 colony	No growth
8. Distilled water No. 3—boiled for 30 minutes in a sterile hard-glass flask, closed with sterile rubber stopper and tubes (see Fig. 1)	Sterile	—	—	—	—
9. Distilled water No. 3 in a sterile hard-glass flask, stopped with cotton and capped with parchment paper and heated in Arnold steam sterilizer for 30 minutes	Not sterile	+	+	+	..

* The supposition is that the boiling was not active enough in Nos. 5 and 7.

TABLE III.—TEST ON UNSTERILIZED FLASK.

		Incubation on agar plate after standing		
	1 day.	4 days.	7 days.	10 days.
10. Tap water in an unsterilized flask, stopped with cotton and boiled for 30 minutes	Not sterile	+	+	+
11. Tap water in an unsterilized flask and closed with rubber stopper and tubes (see Fig. 1) and boiled for 30 minutes	Not sterile	+	+	+
12. Tap water in an unsterilized flask, stopped with cotton and heated for 30 minutes in an Arnold sterilizer	Not sterile	+	+	+

TABLE IV.—STERILIZATION IN THE PRESENCE OF SPORE-BEARING AND NON-SPORE-BEARING ORGANISMS.

		Incubation on agar plate after standing		
	1 day.	4 days.	7 days.	10 days.
13. Distilled water, to which an active culture of staphylococcus was added, placed in sterile flask, stopped with cotton and boiled actively for 30 minutes	Sterile	—	—	—
14. Distilled water, to which an active culture of *B. subtiles* was added, placed in sterile flask, stopped with cotton and boiled actively for 30 minutes	Sterile	—	—	—

Ordinary tap water is even worse, as it often contains dissolved solids in addition to the bacterial life and toxins (see Table I, experiment No. 1). Therefore only "freshly distilled water" must be used.

The Flask.—The Pharmacopoeia directs that "a flask of hard glass" must be used. This may be any of the non-soluble glass flasks now on the market. If an ordinary chemical flask is used, the hour's boiling will cause the solution of appreciable quantities of soluble silicates, and when the water cools these silicates separate in fine, needle-like crystals and render the water unfit for use. The directions require also that this flask be sterilized before using, which means dry heat, at from 160° to 170° C., for two hours (or by autoclave sterilization) (see U. S. P. IX, Part II, p. 616). To prove that this precaution is necessary, the boiling process was carefully tried, using an unsterilized flask. In no instance was the water sterile. (See Table III, Nos. 10, 11, 12.)

The Process.—The Pharmacopoeia directs that the freshly distilled water be placed in a sterile flask of hard glass, stopped with sterilized absorbent cotton and boiled for thirty minutes.

These directions were strictly followed, and the results are reported in experiments Nos. 4 and 7. No. 4 was sterile on the first day and remained sterile for at least two weeks. No 7 showed one colony per mil at first, but gave no growth on the 14th day. The degree of evaporation in the two flasks indicated that No. 7 had not been boiled as actively as No. 4, which probably accounted for its unsterile condition. This same condition existed in Nos. 5 and 8; less evaporation in No. 5 corresponded with the result—an unsterile condition.

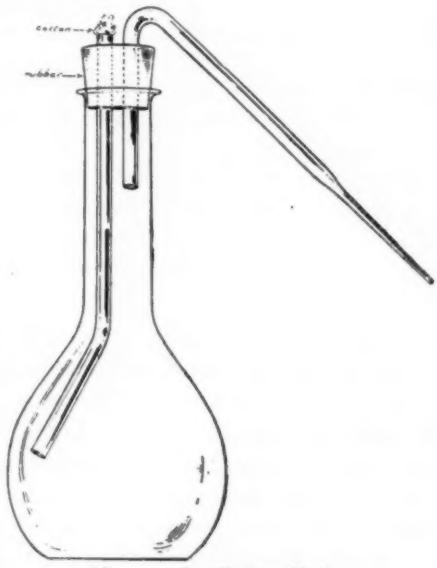

Fig. 1.—Sterilizing Flask.

Further experiment on this point shows the necessity of directing "active boiling" in the U. S. P. process, if sterility is to be insured.

Because of the difficulty of maintaining sterility in distilled water and normal salt solution when portions are to be withdrawn, the cotton plug was replaced with a sterile rubber stopper carrying two glass tubes (see Fig. 1). One of these tubes serves as an intake for air, being plugged with cotton and extending almost to the bottom of the flask. The other permits the water to flow from the flask when inverted and is constructed on the siphon principle so that all liquid drawn into the tube will be discharged and not drawn back into the flask. The sterility of the outlet is insured, when water is to be drawn, by dipping it for a few moments into chloroform in a bottle. The first water that flows from the flask washes out the chloroform and is discarded.

This apparatus proved very satisfactory, the stopper being inserted before boiling the water. Experiments Nos. 5 and 8 show the result of their use, No. 5 not being "actively boiled."

The use of the Arnold sterilizer live steam for 30 minutes did not produce a sterile product in any instance (see experiments Nos. 6 and 9). Evidently this method requires, reheating on successive days to be satisfactory.

It has been suggested that probably a sterile, freshly distilled water might be prepared by direct distillation with a glass Liebig condenser, collecting the distillate in a sterile flask, under aseptic conditions. This method did not yield a sterile product in any instance (see experiment No. 2).

Conclusions.—Use the autoclave method if practicable for preparing sterilized distilled water and suggest it in the U. S. P. text. Always use freshly distilled water and a sterile, hard-glass flask. If the boiling method is to be followed, stopper the flask with absorent cotton or the tubes and stopper, heretofore suggested, and boil the liquid actively for at least thirty minutes.

PRESCRIPTION CLINIC.*

BY CHARLES H. LAWALL AND IVOR GRIFFITH.

(1)	Sodium Salicylate.....	2 drachms.
	Sodium Bromide.....	1 1/2 drachms
	Caffeine Citrate.....	36 grains
	Peppermint Water.....	1 1/2 fluidounces
	Syrup.....	2 fluidounces

At a recent meeting of the Pittsburgh Branch, A. Ph. A., the foregoing prescription was discussed and it was said that it was twice prepared by different dispensers and each time exhibited a brown precipitate. According to the journal in which the article appeared suggestion was made that the precipitate was probably due to some impurity present in the sodium salicylate or to a trace of iron due to coming in contact with the spatula (?), used in compounding. These were mere conjectures, however, and the filled prescription was not exhibited.

Filling the prescription as it stands, with sodium salicylate U. S. P., and without a *spatula* (*!!!*), resulted in the unsightly mixture shown herewith and, no matter in what order the ingredients were mixed, the same reaction was in evidence. The precipitate is salicylic acid. It is simply a case of the stronger organic acid, citric acid of the caffeine citrate (which is not a true salt but a mixture), displacing the weaker organic acid, salicylic acid from its combination with sodium. The alkaloidal caffeine goes into solution. The incompatibility is corrected by using caffeine (alkaloid) 18 grains instead of the 36 grains of the caffeine citrate.

(2)	Thymol Iodide.....	1 drachm
	Zinc Paste (Lassar).....	
	(without salicylic acid).....	8 drachms

A student brought this prescription in with the statement that it had resulted in a dark ointment compared with the product dispensed by another phar-

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* Presented before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918. Several of the prescriptions were discussed; Charles H. LaWall, H. P. Hynson, J. H. Beal, J. C. Peacock, C. M. Ford, and others participated in the discussion.

macy. We did not find this to be the case when the prescription was filled with U. S. P. thymol iodide, but found the solution of the problem by compounding the same prescription with a poor grade of thymol iodide, which an examination proved to contain a trace of free iodine. The modified Lassar's paste is stiffened with starch and the latter reacts with the free iodine and the latter thymol iodide gave rise to the dark color of the ointment. This is simply another argument in favor of using nothing but high-grade chemicals, and from reputable manufacturers. It recalls to our mind the dilemma of a pharmacist who purchased a stock of thymol iodide from a peddler and found it only partially soluble in alkali solution. Examination of it under the microscope demonstrated the presence of a considerable quantity of lycopodium, with which it had been sophisticated. One experience of this type usually cures a peddler patron.

(3) Solution of Hydrogen Dioxide,
Glycerin, of each sufficient to make... 4 fluidounces

We referred in our paper last year to the fact that it had been stated in several drug journals that this prescription, on standing, developed oxalic and tartaric acids, through oxidation of the glycerin by the dioxide. We have failed to find any evidence at all of oxalic acid or tartaric acid in the prescription after a period of one year. It was originally filled with an acetanilid-free dioxide solution and C. P. glycerin. The experiment was later made with dioxide preserved with acetanilid but the results were exactly the same. One fact clearly demonstrated by occasional assaying of this prescription was the preservative effect of the glycerin on the peroxide. Prof. E. A. Ruddiman in his authoritative work on *Incompatibilities* carefully states that "hydrogen dioxide is *said* to oxidize glycerin to glyceric, oxalic and tartaric acids." (IV Edition, page 200.)

In the face of the foregoing evidence, we are inclined to say, that while this may be true with greater concentration and higher temperature, it is not true of mixtures of peroxide and glycerin under prescription conditions.

(4) Heavy Magnesium Oxide..... 10 grains
Phenyl Salicylate.....
Acetyl Salicylic Acid, of each..... 5 grains

"In the presence of moisture, and this is furnished by the acetyl salicylic acid crystals, calcined magnesia reacts with the acetyl salicylic acid with the production of magnesium acetyl salicylate. Further chemical interaction takes place with the possible production of magnesium salicylate and magnesium acetate. There will also be an exchange of radicals of the salol and the magnesium oxide with the formation of more magnesium salicylate and pure phenol or magnesium phenolate." The foregoing is a statement which recently appeared in the *Journal of the American Medical Association*.

In order to test its correctness the prescription was compounded under ordinary conditions with pure chemicals and dispensed in parchment papers. One paper was left open to atmospheric contact for one week, but there was no apparent change in the physical character of the powder, nor was there any appreciable difference in its odor. The magnesium oxide was apparently unaltered (at least

not to a great extent) for the alcohol-insoluble portion of the powder at the end of a week was practically the identical weight of the magnesium oxide originally used. We are not prepared to state that no changes will take place, in the presence of much moisture, and in time, but think that under ordinary conditions and with precautions to exclude moisture the prescription is dispensable, and would be all used up before any marked changes occurred.

(5)	Iodine	24 grains
	Methyl Salicylate	2 drachms
	Anhydrous Lanolin	4 drachms
	Cotton-seed Oil	6 fluidounces

The iodine was reduced to a fine powder and the melted anhydrous wool fat added to it. To this was added, with constant trituration, the oil slightly warmed, and finally, the methyl salicylate with shaking. A qualitative test performed on this mixture, two days after its compounding, resulted in the discovery that the iodine had been completely absorbed and was tightly held in organic combination with the oils. It is questionable therefore, whether the physician gets the action desired from the iodine prescribed.

(6)	Argyrol	40 grains
	Potassium Iodide	20 grains
	Iodine	20 grains
	Glycerin	6 grains
	Water.....to make	1 fluidounce

(Year Book, 1916, p. 275.)

Attention was originally drawn to this prescription through an article printed in the *Critic and Guide*. The above prescription was filled and used by the patient with the result that the throat became intensely inflamed and irritated. What actually happens is that, contrary to expectation, the organic silver compound is dissociated and attraction takes place between the free iodine and the silver with the production of some silver iodide, which evidently caused the intense irritation of the inflamed mucous membrane instead of soothing it. There is no way of preventing this and the doctor should be informed of the dangerous incompatibility and advised to leave one of the reacting factors out.

(7)	Bismuth Subsalicylate	2 drachms
	Sodium Bicarbonate	4 drachms
	Cerium Oxalate	30 grains
	Elixir of Orange, to make	3 fluidounces

To all appearances there is no difficulty about filling this prescription. When it leaves the counter, it is a harmless looking, white mixture, and a shake well label is affixed in a prominent place. In about fifteen minutes, however, trouble starts through evolution of copious amounts of carbon dioxide and the reaction is violent enough to burst the bottle or push out the cork and spill the contents. This happens even when the bismuth salt contains no free salicylic acid. The presumption is that the varying and unstable bismuth compound is dissociated and the liberated salicylic acid reacts with the sodium bicarbonate with the production

of sodium salicylate and carbon dioxide. The cerium oxalate apparently plays no part at all in the reaction.

(8)
Resorcinol	20 grains
Zinc Oxide	4 drachms
Boric Acid	20 grains
Olive Oil	2 fluidounces
Solution of Calcium Hydroxide	6 fluidounces

This looks like a formidable prescription at first glance, but should cause no difficulty in the hands of a thoughtful compounder. There are several ways of incorrectly compounding it. One is to dissolve the boric acid and resorcinol in the lime water, add the zinc oxide and finally the olive oil. A better way to fill it and one where no difficulty is encountered, is to dissolve the resorcinol in the lime water. The olive oil is then added and the mixture thoroughly shaken. Then the zinc oxide, in the form of a fine impalpable powder, is added and the mixture thoroughly shaken. Finally, the boric acid is incorporated by rubbing it up in a mortar with a little of the mixture, and then transferring into the remainder of the prescription. The result is a smooth mixture that does not readily separate out.

(9)
Corrosive Mercuric Chloride	1 grain
Solution of Potassium Arsenite	2 fluidrachms
Syrup	1 fluidounce
Peppermint Water to make	3 fluidounces

No matter how this prescription is compounded, trouble will be encountered. The arsenite in the presence of the excess of carbonate in the Fowler's solution brings about a change in which the corrosive sublimate is converted partly into mercurous chloride and partly into metallic mercury with the change, at the same time, of the arsenite into the arsenate. Neutralizing the solution of potassium arsenite with hydrochloric acid or rendering it slightly acid will retard the change. The doctor would do better by using solution of sodium arsenate in equivalent amount.

(10)
Iodoform	
Bismuth Subnitrate	
Mild Mercurous Chloride of each	2 drachms

Use as dusting powder.

This prescription was filled by a Philadelphia pharmacist and dispensed in a white vial topped with celluloid. In a day or so, the patient returned the vial requesting an explanation for the chameleon-like tendency of the powder to change its color. When dispensed, the mixture was a light canary-yellow. After being placed in the sunlight for a while the actinic rays get in their work by releasing some of the iodine from its combination and this iodine and calomel make friends with the ultimate production of the red iodide of mercury. Oddly enough, on shaking the vial well, the red color apparently fades, although, in reality, it only lessens in its intensity of tint by being neutralized by the heavy yellow of the rest of the powder on being shaken with it. The red color reappears on the side exposed to the light as often as it may be remixed and exposed again.

PHARMACEUTICAL STANDARDS, PAST AND PRESENT.*

BY EDWARD KREMERS.

It has long been a practice in this country to relegate preparations that were not regarded "worthy" of a position in the United States Pharmacopoeia to the National Formulary. In not a few instances the pharmacist has continued to demand a standard when the physicians on the U. S. P. Committee of Revision demanded the deletion of certain preparations. The pharmacists' demand arose in part from the fact that physicians continued to prescribe preparations discarded by the Sub-committee on the Scope of the Pharmacopoeia. Likewise, popular medication makes demands for pharmaceutical standards, quite irrespective of regular medical practice, a demand which the pharmacist may not ignore.

To this well-known situation that has always been with us, the rearrangement of the drug market, notably the restrictions on the use of sugar and the scarcity of glycerin as a sugar substitute in pharmaceutical preparations, has made the present problem of standards a very perplexing one. If to this there be added the statement made by a well informed chemical manufacturer that more than one-half of the chemicals of the new chemical factories, that have sprung up like mushrooms since the war, have to be rejected because not up to the standard of the U. S. P.; if we further call attention to a circular letter issued by a crude drug firm to all state agricultural experiment stations, asking the sick and the lame, the maimed and crippled, in fact all who can not take part in the important economic problems of this nation, to use such time and strength as they possess in the gathering of wild medicinal plants and to cure them to drugs without giving more than a hint as to what to collect and not even a suggestion as how to cure; if we thus add inexperience and unguided ignorance to the more rational attempts made at the solution of a problem that is so grave under normal conditions, we may well expect that standards are going, provided they have not already gone, a-glimmering, if you will pardon this inelegant but highly characteristic expression.

Such being the situation, not only in this country but throughout the world, the entire problem of standards may seem highly inapropos at the present time. Yet the contrary is the case. That this is being realized is clearly shown by a number of recent events. Not only has the work on standards been continued by the Government, by such organizations as the Council of Pharmacy and Chemistry of the A. M. A. and by various pharmaceutical organizations, but it has been receiving the special attention of such bodies as the American Association of Drug Manufacturers and the American Association of Pharmaceutical Chemists and is to receive further consideration when the Association of American Food and Drug Officials meet in this city somewhat later in the month.

Not many years ago this Association appointed a Committee on Unofficial Standards. One of the special problems of this committee was to look into the pharmacopoeial history of such chemicals, vegetable drugs, and galenicals as had been dropped from the U. S. P., but had not been given a place in the N. F. It

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Chicago meeting, 1918.

was planned at that time to readopt one of the old pharmacopoeial standards or a revised modification thereof. No doubt, many of these revived standards will find their way directly or indirectly into the N. F. Some of them may already be included in the latest revision thereof.

There are two phases of work on standards that deserve special mention in this connection. One of them has already been referred to in connection with papers that I have presented to this section, both of which had to deal with what I have chosen to name "A century of the U. S. P., 1820 to 1920." One of these had to deal more particularly with the galenical oleoresins of the U. S. P., the other with the Liquors of the same official guide. (Exhibit of proof of Dr. Du Mez's manuscript on Oleoresins.)

In this connection it possibly should be pointed out that more than a year ago, the American Association of Drug Manufacturers appointed a Committee on Standards, and that this Committee has shown its appreciation of the historical significance of standards by beginning its work in the Lloyd Library. Unquestionably this work will prove valuable to the members of the organization that has undertaken the task. To what extent it will prove beneficial to pharmacy at large remains to be seen. A thorough monograph of each class of preparations, giving the literary references to all information to be had about each specific preparation in that class, is certainly a requisite to all intelligent and scientific discussion and research looking toward its improvement, also to the establishment of a present standard, even if that standard is to be one that was laid down in the past.

The other phase of standards to which I desire to direct your attention, however briefly to-day, is represented in the reproduction of standards, past as well as present, by means of the card form for the dissemination of information. Aside from the general information, each item is to receive a separate card, and each standard under that given item a separate card. Thus information on the Liquors may be supplemented by another card on Arsenical Liquors, this in turn by a card on Fowler's Solution, and this finally by numerous cards giving a fac-simile reproduction of the text of each standard, foreign as well as domestic, together with references to the special literature on that standard. (By way of illustration the card for Liquor Potassii Arsenitis, U. S. P. 1890, was exhibited.)

Without going into the merits and defects of the card system as a method of distributing and collecting encyclopaedic information, it may suffice to point out that an actual beginning is being made and, what is equally important, it is a beginning to which any individual may make a contribution or as many contributions, as he sees fit. Let us hope, therefore, that the beginning already made may prove acceptable and that its acceptability will be demonstrated by numerous contributions from others.

SECTION ON COMMERCIAL INTERESTS, AMERICAN PHARMACEUTICAL ASSOCIATION.*

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN CHICAGO, ILL., AUG. 14 AND 15, 1918.

Chairman R. P. Fischelis called the first session of the Section on Commercial Interests of the American Pharmaceutical Association to order at 2.00 P.M., Wednesday, August 14, in Congress Hotel.

Owing to the absence of Secretary F. W. Nitardy, Hugo H. Schaefer was named Secretary pro tem; he occupied the chair during the reading of the Chairman's address.

Address of Chairman R. P. Fischelis:

LADIES AND GENTLEMEN: Many problems of a commercial nature have confronted the pharmacist during the year that has passed since we met in the city of Indianapolis—problems of more than ordinary importance and interest because many of them were directly concerned with the winning of the war or were the result of war-time conditions. In considering the subjects that might be touched upon in my address as your chairman—it became necessary to concentrate thought on a few matters which seemed to loom most important out of the great variety of subjects deserving of consideration.

We have therefore arranged our program so that one session might be devoted to a discussion of making our pharmaceutical man-power more efficient commercially, and the other session to a discussion of subjects connected, more or less directly, with the winning of the war.

In order that our discussions may be as broad as possible in the short time allotted we have asked some of our members to take up special phases or angles of the subjects under discussion and we trust that all present will feel free to speak their mind and give us the benefit of their views.

The subject matter of your chairman's address has been divided into two sections and is intended to introduce the topics to be discussed and the papers to be presented. But before going into the program of the day, permit me to call your attention to one of the rules of the American Pharmaceutical Association affecting the work of this Section, which, to the best of my knowledge, has not been observed for the past few years.

This rule requires the Section on Commercial Interests each year to select a topic for discussion at meetings of State Pharmaceutical Associations and the presentation of a summary of these discussions at the next annual meeting of the Section. No topic was selected last year so there is no summary to present. However, I wish to propose as the topic for the ensuing year: "Pharmacy and Pharmacists After the War." It is high time for us to be planning for the immediate future of both pharmacists and pharmacy. This war is causing world-wide changes in our mode of living, in science and in our industries. If we want to keep pace with the progress of the times we dare not wait until after-the-war conditions are upon us. I would therefore recommend that the incoming officers of the Section on Commercial Interests request every State Association to make a discussion of the topic suggested above a part of the program at their next annual meeting. The discussion might include such questions as the help problem, the problem of correct prices, our attitude toward imported merchandise, and other similar problems. I would further recommend that this subject be brought to the attention of the Council of the A. Ph. A. with the request that the Association take the initiative, or at least an active part, in any movement designed to meet the new conditions and protect pharmaceutical interests after the war.

The main topic before us to-day is more or less educational in its nature. We have heard the criticisms leveled at our colleges of pharmacy for not turning out graduates who are of greater value to their employers as far as the commercial side of pharmacy is concerned. The attitude

* Papers with discussions will be printed apart from minutes.

of most college men is that there is not sufficient time in the minimum pharmacy course for so-called commercial training. In order to get at a basis for discussion, a questionnaire was sent to every college of pharmacy in the Conference.

The most important questions asked were:

1. How many hours of Commercial Pharmacy, as defined in the Syllabus, are included in your minimum Pharmacy course?

2. Who teaches Commercial Pharmacy in your course?

3. What are the teacher's special qualifications for teaching this subject?

4. What portion of the course as mapped out in the Syllabus, do you include in your instruction?

5. What portion of the course, as mapped out in the Syllabus, do you exclude?

6. What special subjects do you reach under the heading of Commercial pharmacy that are not covered in the Syllabus?

7. What subjects receive special attention in your Commercial course, as for instance, salesmanship, advertising, book-keeping, accounting, etc.?

It was hoped that the answers to these questions would indicate first, the extent of the commercial training courses in our schools; secondly, what commercial subjects there is a special demand for; thirdly, whether competent authorities were covering the subject; and fourthly, to what extent the Syllabus was being used as a guide.

The information that has come to hand is very interesting. We have, for instance, a letter from one Dean which reads:

"It is my opinion that the best way to handle this matter of teaching commerce in colleges of pharmacy is not to make the question part of the proceedings at all. I do not think we should combine commercial courses with pharmaceutical courses, but I am a firm believer in giving the pharmaceutical student a good grounding in those laws and customs upon which all commercial transactions are based; for instance, I feel that students should be given a series of from eighteen to twenty-four lectures on contracts, agency, property, real and personal, commercial paper, bailments, etc.

"It is my opinion that such subjects as salesmanship, advertising, etc., ought not to be taught in Colleges of Pharmacy. The Colleges ought to continue to lead in professional and ethical pharmacy and not to follow the pander to the altogether too commercial tendencies of to-day.

"The A. Ph. A. ought not to dignify this question by giving it attention. Bringing the matter forward only gives the more commercially inclined opportunity for increasing their commercial propaganda."

Another letter reads:

"While I appreciate the importance of the so-called Commercial Pharmacy, I am of the opinion that the many courses offered are rather a sad comment on American pharmacy. We have long given a course in Drug-Store Practice, which alternates with a similar course in the History of Pharmacy, so that even all of our two-year men have an opportunity to take both. I mention this merely to show that I am not unmindful of the situation, though I have but little sympathy for the attempts that are being made at present to remedy it."

The number of hours devoted to the subject of commercial pharmacy in the various colleges ranges from 0 to 90. The teachers in most cases are the professors of Pharmacy, many of whom have had practical drug store experience. In a few cases experts in business science are employed. In most cases the Syllabus is used as a basis for the course and only rarely are there any additions.

It would seem, therefore, that we have plenty of justification for the criticism that there is not enough commercial training in our schools to-day to fit men for the present-day retail store. At the same time it is difficult to suggest just what might be eliminated from the regular pharmacy course in order to make room for such training.

We have a number of papers bearing on that subject on our program to-day and I shall therefore take no more of your time in discussing it.

The second portion of this address bears on war-time problems.

We have heard a great deal about the conservation of drugs and considerable effort is being exerted to carry out a rational program of drug conservation, but there is another phase of conservation which needs our special attention at this time.

A short time ago I received from the superintendent of a concern engaged in pharmaceutical manufacturing a note stating, "that so far as actual figures show, ordinary packing cases have advanced from 100 to 130 percent; excelsior from 125 to 150 percent, corrugated paper 50 percent, labor 50 percent. Taking everything into consideration it can be safely stated that in order to get the same results in manufacturing and shipping pharmaceutical products we must spend two dollars where we formerly spent one."

Another manufacturer sent out a notice to this effect: "For many years it has been the custom of American pharmaceutical and chemical manufacturers to make no charge for packing cases in export shipments. Years ago when lumber was plentiful and cheap it was a very easy matter to carry this cost into the selling price. Now, however, conditions have changed and there has been a very notable increase in the cost of wooden containers, which frequently are made of heavy lumber, and in addition have to be strapped with steel bindings. Recently several of the larger American manufacturers have decided to charge back one-half of the cost of such cases."

Manufacturing concerns of all kinds outside of the drug field are doing everything possible to conserve coal and many other things that go into the manufacture of the necessities of life and we, as pharmacists, must not trail behind in this work.

The department stores in some of our larger cities are only open for business six and a half hours a day in order to conserve coal. There is no reason why the drug store should be open twenty-four hours of the day, and the shortage of help will undoubtedly force some reforms in the connection.

There is one source of absolute waste in the pharmaceutical field and that is in the return of biological and pharmaceutical products to manufacturers. Most of these returns are made just because it is permissible. Many buyers are reckless and lay in far greater supplies than they actually need, returning these goods to the manufacturer for credit, after their expiration date. This is absolute waste. It is not only a waste of serum or vaccine or whatever the medicinal may be but it is also a waste of glass, packing material, rubber, and everything else that enters the manufacture of these products. I think that some cognizance should be taken of this question, and I believe this Section should go on record as approving of a campaign of conservation of all materials concerned in the manufacture and supply of medicinal products.

In order to crystallize sentiment along this line I have prepared the following resolutions which I would like to present at this time:

"*Resolved*, that it is the sense of the Commercial Section of the American Pharmaceutical Association that steps should be taken by pharmacists everywhere to conserve materials entering into the manufacture, packing and distribution of pharmaceutical and biological products, and

"*Resolved*, further that the return of drugs and merchandise for credit, especially biological products which are so urgently needed for conserving the life of our military and civil population, be discouraged and steps be taken to prevent the reckless ordering of these products in quantities greater than actually needed.

"*Resolved*, further that the Council of the A. Ph. A. be requested to sanction the appointment of a committee of five to be known as the Committee on Conservation—this committee to consider suggestions regarding changes of formulas to aid conservation of glycerin, etc."

CHAIRMAN PRO TEM SCHAEFER: You have heard the address of the Chairman. It contains three recommendations, as follows:

"I would therefore recommend that the incoming officers of the Section on Commercial Interests request every State Association to discuss the topic suggested at the next annual meeting. this discussion to include such questions as the help problem, the problem of correct prices, our attitude towards imported merchandise, and other similar problems."

"I would further recommend that this subject be brought to the attention of the Council of the American Pharmaceutical Association, with the request that the Association take the initiative, or at least an active part, in any movement designed to meet the new conditions and protect the pharmaceutical interests after the war."

"That the Council of the American Pharmaceutical Association be requested to sanction the appointment of a committee of five, to be known as the Committee on Conservation, this

committee to consider suggestions regarding changes of formulas to aid in the conservation of all materials concerned in the manufacture and supply of medicinal products."

On motion duly seconded and carried the recommendations were concurred in.

Chairman Fischelis then resumed the chair and H. S. Noel acted as Temporary Secretary.

The following papers were read and discussed and referred for publication:

"Commercial Training in Colleges of Pharmacy," by E. Fullerton Cook. (See p. 880, October, 1918.)

"A Square Peg in a Round Hole," by Charles W. Holzhauer. (See p. 874, October, 1918.)

"Repetition Makes Reputation," by W. W. Figgis. (See p. 35, January, 1919.)

"The Profits in Turnover," by H. S. Noel. (See this number of the JOURNAL.)

The following Nominating Committee was appointed: Charles W. Holzhauer, Harry B. Mason and W. W. Figgis.

The first session of the Section on Commercial Interests was then adjourned.

SECOND SESSION.

The second session of the Section on Commercial Interests of the American Pharmaceutical Association was called to order by the Chairman, Robert P. Fischelis, at 9.30 A.M., Thursday, August 15. H. S. Noel acted as Temporary Secretary.

Chairman Fischelis stated that the program of this session was designed to take up the question of conservation, not only of drugs, but many other things that enter into the pharmaceutical manufacture and trade. The first paper was by A. R. L. Dohme, of Baltimore, entitled "Conservation in Pharmacy." (See p. 790, September, 1918, JOURNAL A. PH. A.)

The next paper was on "The Conservation of Crude Drugs," by Hugo H. Schaefer. After discussion, this paper was referred to the Conservation Committee. (See paper and discussion, p. 1049, December issue JOURNAL A. PH. A., 1918.)

The following papers were then read, discussed and referred for publication:

"The Advance by Kilometers," by H. V. Arny. (See p. 1052, December, 1918.)

"Advertising Pharmacy to Pharmacists," by J. C. Peacock. (See p. 1056, December, 1918.)

"The Appearance of a Package and its Contents as a Factor in Merchandizing," by F. W. Nitardy. (See p. 32, January issue JOURNAL A. PH. A., 1919.)

The report of the Nominating Committee was made by Chairman Charles W. Holzhauer, and approved by the election of the following:

Chairman—E. Fullerton Cook, of Pennsylvania.

Secretary—H. S. Noel, of Indiana.

Associates—Hugo H. Schaefer, of New York; J. H. Rehfuss, of New York; I. M. Light, of Illinois.

The Section on Commercial Interests, American Pharmaceutical Association, was then adjourned.

THE PROFITS IN TURNOVER.*

BY H. S. NOEL.

I am in no way responsible for the saying that honest opinions, like homely women in street cars, stand the longest, but I will go on record before this audience as one who has honest opinions about the conduct of the retail drug business. Whether or not these opinions of mine are fit to stand, you are to be the judges.

I am certain that my intentions are of the best and that what I have to say will appeal to you in a different manner than the preachings of a young colored minister who was long on war talk but slow to enlist. He proclaimed loudly his intentions of helping to win the war and wound up his prayer one Sunday morning in this manner: "Use me, Lord, use me—in mah advisory capacity."

A great many men who have been in business for a number of years show a tendency—an unfortunate tendency I think—to crystallize. They resent innovations; they are satisfied to let well enough alone and refuse to meet the demand of changing business conditions. I will not go so far as to say that they are always failures or doomed to failure eventually, but I do say that their chances for independence and money making are materially lessened. Some men and some stores are money-makers despite crude business methods, a lack of accounting methods, inventory or semblance of system of any kind. They remind me of the farmer in Arkansas, whose house was built on posts. He put a picket fence around the house and kept hogs underneath his home. When a traveler asked him if he thought the practice a good one and in keeping with modern ideas of sanitation, he remarked that he had been keeping hogs that way for fourteen years and was yet to lose a hog.

Up in New England, in the town where I was born, there is still in existence a small drug store run by a man who in my youth was considered an excellent pharmacist. In his store will be found the same fixtures and show cases and a part of the goods that were there forty years ago.

Time was when this druggist made a good living. He is respected by all and is a member of the local board of health. He has no business these days, however. Half the time the store is closed because there are no customers. If stock grew in value with age he would now be independent. Changes in business may come and go, but this druggist goes on doing business just as he did forty years ago. The methods by which men became successful then are not those of to-day, however, and he has been left behind in the march of progress.

The time was when inventory once a year was considered often enough and by many too often.

In the brief time at my disposal I cannot hope to say much about the value of the inventory, departmentizing business, selection of side-lines, the value of advertising, etc. The time allotted is all too brief to treat of one single phase of merchandising which I have selected to talk upon. It is the importance of turnover and the part it plays in the success or failure of the retail drug business.

In debating it is customary, in order that the judges may have firmly fixed in their minds the exact meaning of expression used, to devote a part of the de-

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bate to a definition of terms. Talking, as I am, to an audience that is quite familiar with the expressions I shall use, there is but one term that we must think alike upon if I am to be understood by all.

What do we mean by turnover?

It is an expression that is commonly used with reference to the number of times in a given period of time that the investment in stock in the store is turned into cash. Perhaps we should say that turnover is the annual business of a store, and the stock turns the number of times stock is turned into cash. For our purpose, however, let us assume that by turnover we mean stock turns, and by stock turns—turnover.

There are three ways in common practice of determining the rate of turnover; but only one real way from the auditor's standpoint.

1. Divide the total sales by average inventory at cost.

This method has little to commend it as a part of the sales represents gross profit margins.

2. Divide sales at selling price by inventory at selling price.

3. Divide sales at cost by average stock on hand at cost.

The third method is to be preferred by far.

Let us assume that a druggist does a business of $18,000 a year. Let us further assume that his gross profit is 35 percent and therefore that the cost of the goods is 65 percent, or $11,700. It is a very easy matter then for us to determine that with an average investment in stock of $5,000 this druggist has turned stock a little better than twice.

It is very apparent that the greater the sales and the smaller the investment required to make those sales, the greater will be the profit. Anything that tends to increase sales without increasing investment hastens the turnover.

As long as the maximum sales can be made on a minimum investment without increasing the cost of producing the business materially, we may safely conclude that the problem of turnover has been solved.

While it is claimed by some that increasing the turnover increases the overhead expense, there are numerous and specific examples to the contrary.

In Albany, New York, there is a drug store that has a very meager stock in point of quantity. Most of the needs of this store were supplied by a nearby wholesaler from whom the store received goods twice daily by delivery and from one to five times daily by messenger. The annual business of this store was around $12,800 a year. Figuring the gross expense at 35, the cost of goods was approximately $8,300, or 65 percent. The average inventory was never above $1,500, which gave this store then a turnover of better than five.

In a small town in Indiana, a druggist died leaving only a small life insurance and a drug store with a stock valued at $2,300. The store was a problem to the widow. She went to a wholesaler for advice and he said: "If you take the money you get out of selling the store you will get $138 a year." He advised that she keep the store and get a man to run it.

Through the efforts of the friendly wholesaler she secured the services of an honest conscientious clerk. He came on a profit-sharing basis—this was before the war—the woman and the clerk each drew out $75.00 a month. By agreement the net earnings were to be divided between the proprietress and the clerk.

For two years the total income has been $2,400, or $1,200 apiece. A striking fact is that at no time has the stock inventoried more than $50.00 above the original investment and at one time was $27.00 less.

This profit from both the stores I have just mentioned was made possible through quick turnover of stocks which in turn was made possible through buying as needed of a nearby wholesaler.

There are several ways in which druggists can meet the problems that confront all merchants in war times. One important method is the curtailment of stock in an effort to hold the investment as near as possible to normal in order to avoid tying up too much capital without extending profits, and the other is to endeavor at all times and in all lines to make use of the turnover by converting capital into cash and making a dollar earn profits as many times as possible during the year.

Thus we determine that frequent converting of merchandise into cash, made possible by buying often and as needed, is one big factor in promoting turnover. We may well consider several other important factors that contribute to the desired end and have an important bearing on turnover: nearness to a wholesaler or other source of supply, carrying advertised lines for which a demand has already been created and which, therefore, require less selling energy, and retail drug store advertising.

The great difficulty with most druggists, in my opinion, is not an unwillingness to systematize business, but a lack of knowledge of the best means to obtain the desired facts. There are far too many druggists who guess at what the net profit will be and at the cost of doing business. Upon inquiry I find that many retailers base profits on net costs at the time of purchase and on total sales at the end of the year. These druggists then wonder why it is that the bank balance does not jibe with the profits shown on paper. I find upon investigation that druggists who pretend to have a semblance of system very frequently do not figure correctly. They omit the addition of a fixed sum for themselves in overhead and almost always figure overhead too low through omission of certain expense items, that properly belong to overhead classification. The result is, of course, a high percentage of profit on paper and a small credit balance on the check book. The money is gone but unaccounted for.

My first job in a drug store included, among other humble tasks, the care of a steam-heating plant for a three-story business block. I'm qualified with a license as a pharmacist and qualified without a license as a fireman.

I visited the cellar five to ten times daily in cold weather and was reminded when the other tenants had cold feet by code signals on the steam pipes. It seemed to me that I hadn't a friend in the block. Someone was continually knocking. I learned after a time to keep my eye on the gauge more than on the coal shovel and the result was that an indication of five pounds of steam on the gauge caused me to consign all the tenants to warmer climates without visiting the coal pile. An accounting system is to the druggist what the steam gauge is to the boiler. Both are quick, sure indications, and labor savers necessary to the successful operation, respectively, of a steam engine or the drug business.

Imagine trying to run a railroad engine without gauges. It would be a matter of guesswork you will agree. And so it is with the drug business or any other

business and particularly so in such trying times when the universal cry is full-speed ahead. It is a hazardous undertaking to attempt to man the throttle without a competent engineer and a guide for him to work by.

Hugh Chalmers once made the remark that what one man can do others can do. This might lead us to believe that what is possible for a big store is also possible for a small store. It might delude us into thinking that one man was always endowed by Nature with as much gray matter as every other man. We know that literally this statement is not true, but, on the other hand, we do know that both men and business conditions are capable of change and improvement.

William H. Ingersoll, who was chairman of the cost accounting systems and retail service committee of the Associated Advertising Clubs of the World, is authority for the statement that the large store has become large because it could take advantage of the possibilities, while the small store needs help and must be raised to an accurate basis of knowledge of its own business.

Let us not make the error of thinking that all the advantages are with the big store. True it has the advantage of capital but in system and accounting methods the small store has only to reach out to equal the large store's efforts. The big purchasing power is not so great an advantage as many would have us believe. Quantity "buys" to secure better prices necessitate ware-houses and storage quarters and quick turnover. On the surface of things it appears that the chain stores and big buyers have all the best of it. They go around the wholesaler and take his profits and are thereby in a position to sell cheaper and still make greater profits. This idea is largely fallacious.

In the first place the quantity purchases seldom bring better than 10 or 15 percent cash discount. In order to make buying such quantities advantageous several stores usually share in the deals. This means drayage, repacking and frequently storing, and the overhead of a wholesaler is practically tacked on to the cost of the goods before they are sold. The great advantage that the chain store has in selling the merchandise at a profit is one that is open to any retailer and that is turning stock frequently. The chain stores that can purchase in quantity with a frequent turnover have an advantage. There is no denying it. The message I bring to smaller retailers is the fallacy of attempting to imitate the chain stores in buying as a means of meeting their competition.

The best method of accomplishing that end is to disregard their buying power and stick to the attempt to convert small quantities of merchandise into cash as frequently as possible during the year. If you can turn your stock often enough you can meet their prices without loss and with as great a profit as they enjoy.

When the chain store buys a $500 order of ten-cent articles and disposes of the entire lot at a profit of a penny or two on the item and reinvests the money in the same or other merchandise within thirty days' time, they are traveling at the rate of twelve profits a year and making good profits. You cannot hope to beat that kind of competition. They are not doing this as often, however, as you think they are.

The overhead expense is heavier in proportion in the chain store than in the small store. And, of course, the volume of business is greater. But the retailer who avoids the tempting discounts and sticks to the "buy-as-you-need" plan will

do more to stimulate healthy turnovers and secure handsome profits than he can possibly secure through contracts and deals.

There is just this much in favor of the quantity deal. If you can save five or ten or better discount on a quantity that you can conservatively estimate will turn into cash within sixty days, well and good. Beyond that point quantity deals at any reasonable discount are expensive bargains. Druggists are slow in realizing these things apparently because there is evidence on all sides that the practice is much in vogue.

My attention was recently called to the store of a druggist in Texas, who, six or seven years ago, was apparently doing a successful business. Along came a crop failure two seasons in succession. Cash business shrunk; collections were poor. He had always been a so-called big buyer with an eagerness to secure a better discount and a quantity price above every other consideration.

An extra five, long terms, easy payments, trade discounts, all appealed to him. His shelves were loaded with goods that moved slowly or not at all, goods that were least in demand he always had in stock. He had very few of the more popular products because he had reached a point where the wholesaler demanded cash for all purchases. The manufacturer who gave him five and two and patted him on the back in big-buyer terms had the inside track.

Investigation showed that he had exhausted his resources. He had money tied up in stock; people owed him; creditors demanded cash—the one thing he did not have. He owed the wholesaler $2,500 and his banker over $2,000, all of which was past due. He asked the advice of a traveling man who told him there was a slim chance for him if he would take it. The retailer was advised to ask the banker and wholesaler to keep creditors off while he confined his purchases to quantities as needed and deposited daily sales and collections with the banker.

The plan worked. He bought in small quantities almost exclusively through the wholesaler. It took two years of hustling to get out of the hole and be a free man again. Yet, do you know that even to-day one of the hardest tasks for this druggist is to resist a salesman with an extra discount offer or a five-gallon price where a quarter pound would mean a thirty-day stock? That man holds a dime up close to his eye and hides the dollar profit within reach of his other hand.

When such men as J. Ogden Armour, doing a business of over 500 million a year, William H. Ingersoll of dollar watch fame, and John A. Bush, president of the Brown Shoe Company, St. Louis, warn merchants of the danger of overstock and the profits to be made from quick tuning stocks, it would seem that no better authority could be found.

Armour, writing in *System Magazine*, makes it very clear that the basis of profitable business is active money kept constantly turning; that it is rolling capital that earns the profits.

The way to increase the profits on a rising market without putting the retail selling price so high that people will not buy is to make more sales, or make small profit so many times during the year that the very fact of itsmultiplying will increase the profits, says Mr. Armour in substance.

Armour believes in quick turnover, even to a point where the margin on a dollar is in fractions of a cent. The turnover is maintained by intensive sales methods, quick distribution and sound credit.

William H. Ingersoll, of Robert H. Ingersoll & Bros., says that the small store needs a training school that it may occupy in its more circumscribed influence a position equivalent to that of the bigger enterprise in its bigger sphere.

John H. Bush tells of a Texas merchant who started in the retail business with a capital of $750. He made a connection with one shoe house, one dry goods house and one hat house as his source of supply. In five years he was doing $300,000 a year gross. His first shoe purchase was for $350. In 1916 his Fall order was for $12,000.

Another merchant in another town scattered his orders. He divided his shoe business among ten firms. He carried a $10,000 stock and developed a "specialty habit." He had annual sales of $12,000 and made no money. A few years later he changed his methods. He installed a stock of $2,800 from one house. He did a gross business of $16,000, enjoying six turnovers and an excellent profit, of course. His orders are small, forwarded every two weeks.

These are not theories, they are facts from real life and experience. If other businesses are capable of being handled in such ways why not the drug business?

There are in the United States approximately 47,000 retail druggists. Of these over 25,000 are rated from $3,000 to $10,000 and approximately 14,000 from $10,000 up. The remainder fall below the $3,000 class. The majority then are of comparatively small capitalization. It is, therefore, all the more important, considering the wide range of stock carried by the average druggist that the merchandise be kept turning. The longer goods remain on the shelves the more expensive they become. Ten items that move slowly retard the turnover of the whole stock at the end of the year. It is only by the exercise of watchful care in buying that the retailer can hope to present a satisfactory turnover figure on his inventory sheet.

I have made a careful investigation of business magazines and books by well-recognized authorities in a great many lines of business, and everywhere, as never before, the retailer is being advised along one single line of thought and that is to systematize business, watch the inventory and buy carefully, with the dominant idea in mind that the rate of turnover on proposed purchases is more to be considered than quantity discounts. If proper records are kept it is an easy matter to determine the rate of turnover. Without the right accounting methods, doing business resolves itself into a matter of guesswork. The way to take your business out of the single cylinder class and put it into the twin six class is to know where you are at all of the time. This can be accomplished only by proper accounting.

Too many of us worry in generalities. We know there is something wrong but we are not specifically introspective. It seems to me that if I were a merchant and wanted to improve my business I would endeavor to analyze it from an outsider's standpoint. If a merchant will go away somewhere once a week or once a month and concentrate his mental energies on specific causes of the symptoms of illness in his business, he will soon find out what his troubles are. Once you can determine the cause of the difficulty the battle is half won.

DISCUSSION.

HARRY B. MASON: I don't want to be understood as saying a word against the very vital principle of having as frequent turnovers as possible, but I might point out that it is possible

to carry the turnover idea to a point where you lose money instead of making. To make this practical and to bring it down to a focal point, let me imagine a gross of any article which is offered at the gross price of $50.00. Say that you could get the same article gross in dozen lots at the price of $55.00, which I venture to say is a very fair average. Now, it is also a very fair assumption that a gross would last you a year. Would it be wise to buy it and have it in stock? We assume a hypothetical case where you buy a gross of something for $50.00 and save $5.00, and that gross will last you one year. Against that you have a method of buying a dozen at a time every two weeks, say, as advocated by Mr. Noel. Now, have you saved the money or have you lost money by tying up your capital for the twelve months? That is the question. If you tie up $50.00 for a year, what have you lost? If the stock would last you a year, you have lost half of six percent, namely, 3 percent for a year. And if you had sold half during the first six months you would have got your money back so that you average 3 percent loss on this $50.00 investment for twelve months, therefore that has cost you $1.50; but if you have bought at the $55.00 price you have lost $3.50, which you could have made had you bought the gross. That emphasizes the point that I started out with, that with live items of stock it is decidedly profitable to buy the larger quantities and get the better price and discount.

C. W. HOLZHAUER: As to the matter of buying in small quantities, the theory is very good; but there is one objection which we have found. You have sale for an article right along and you buy one-sixth of a dozen, say, and you sell it out. Somebody forgets to put it in the order book and the next customer comes in and you are out of that article and you lose a sale and you stand a chance of losing the further business of the customer. It might possibly be better, from a business point of view, to buy a couple of dozen of an article, and have it in stock when the customer calls for it rather than run the chance of being out of it right along.

Here is another matter I would like to ask about. What does Mr. Noel refer to by a stock-book? I don't quite understand what he means by keeping a stock-book.

H. S. NOEL: I was in LaFayette, Indiana about four weeks ago and I went into a large drug store there. A very enterprising clerk showed me a loose-leaf stock-book in which he had listed the stock of the store. The business of the store permitted the employment of a stock clerk. In this book the purchases and sales were listed and the items so arranged that the book also served as a directory of the store, whereby items might be found by any one knowing the key. The arrangement made it possible to know the quantity of an article sold in a given period of time and also the amount on hand at any time.

Answering Mr. Mason, I had very carefully considered the matter of those druggists who invest in gross quantities, and at the end of three months are able to take a quarter of that capital and re-invest it in something else. That may apply to a few lines but the large number of items in the average retail drug store must be considered and the unfortunate tendency of the smaller druggists who try to imitate the larger stores in purchasing quantities with the idea that enough can be saved on discount to sell at cut rates and make as much money as the larger store. That is the idea that I am trying to bring to your attention. Those druggists who are above the $10,000.00 figure possibly can invest in stock and turn it over in thirty days, or sixty or ninety or one hundred and twenty days, and re-invest part of that money according to their good judgment. That is a splendid idea, but I caution the smaller retailer against trying to imitate the big fellows who can buy in such large quantities and effect rapid turnovers.

J. H. REHFUSS: I agree with Mr. Noel in regard to the matter of buying in small quantities. On the other hand the matter of buying in large quantities is sometimes desirable, but it requires careful handling. Mr. Mason says that the difference is only about 10 percent on pharmaceuticals. I have found, at times, that the difference is as high as fifty percent. Fluid-extracts in five-gallon lots can be obtained at about half the price when compared with buying in quarter-pound lots. And it pays a man to take a chance and buy five gallons when there is assurance that it will be sold within a reasonable time and the goods will not spoil while waiting for sale.

With reference to the matter of stock-book, I am sorry that Mr. Noel did not go into that more fully. I hoped he would say more about the stock-book also indicating the location of an item. I know some druggists have such a stock-book and have found it exceedingly useful. I have tried to compile a stock-book of that sort and have put a man on that work for about two weeks. He almost gave up the job and at the end of two weeks said it was too big a task.

I expect to complete it some day, but I would like to know if any one present has ever undertaken to do that. It has been done and is a great convenience. A new clerk does not know where an item is, which has been called for by a customer, and the sale is lost, the customer goes elsewhere and very often never returns to the store. A stock-book, properly kept, would remedy that condition. We started out with the idea of classifying the different departments in the store. For example, group the package medicines in one part, the fluid extracts, the perfumes, all under different headings. I believe that some system can be devised whereby each druggist could have a stock-book, showing the location of the stock, the cost and the selling price, and the quantity purchased at different times of the year, and this would be of much assistance in the conduct of business.

C. W. HOLZHAUER: Instead of keeping a stock-book, we find that a card system is preferable. The book is not flexible enough. You may have 300 items under "F" or "G" and you purchase a new item. You might not have room to put it in your book and maintain the alphabetical arrangement. We use a card system. At the top of the card is the name of the article and there is the problem how to list the articles. On the card we have a space provided for the location in the store and the selling price. The plan is such that any item can be located in the section of the shelf where it is placed. Under that we have a column for the amount purchased, from whom purchased, the price we paid and the amount we bought. It has been a very interesting study for me to see the different prices which have been paid for the same article from different houses. I bought one standard proprietary article from a jobber in New York and I paid that man four different prices for the same article, in the same quantity, within six months. The amount of money involved was very small but I had the record. You will find it very helpful to have all this matter on the card. Every item on the bill is put on the card. If Mr. Jones comes in and wants to sell a gross of something we go to the card and see how much was purchased last year, and if we can use this quantity at a discount, well and good we take it; and, if not, we turn it down immediately.

H. S. NOEL: May I ask if the card system is at once both a purchase-book and a stock-book?

C. W. HOLZHAUER: It was so started, but there should be two books. The information on the price is available to everybody in the store, and that is one objection. But we have not progressed far enough to arrange that as yet. It is principally a purchase and a location record.

H. S. NOEL: The book that I was telling you about was one of the neatest records I ever saw. It gave the exact location of all the items. The stock clerk can take certain leaves out of the book, it might be section "J," shelves 1, 2, 3 and 4. He takes these and goes to section "J," shelves 1, 2, 3 and 4 and finds the items listed as they are arranged on the shelf. The book at once gives him the stock record and location and a green clerk can find any item from the stock-book record. That firm carries a stock of between $30,000.00 and $40,000.00 and it is no small task to inventory and keep a stock-book in a store of that size.

THE NATIONAL PHARMACEUTICAL SERVICE ASSOCIATION.

ITS PAST WORK AND FUTURE AIMS.

BY GEORGE M. BERINGER.

At the request of the Executive Committee of the National Pharmaceutical Service Association, the following statement, reviewing briefly the activities of this organization, has been prepared for dissemination. It is very appropriate that at this time, the officers should present to the members and friends a résumé of the work in which this Association has been engaged and the reasons for continuing, even more strenuously, our efforts. It may be considered as a report by the executive officers of the management and discharge of the duties assigned to them.

The National Pharmaceutical Service Association grew out of a meeting of medical practitioners held at the Philadelphia College of Physicians and Surgeons on Wednesday evening, June

20, 1917, to which a number of pharmacists had likewise been invited. At that meeting a number of the eminent physicians and surgeons present, whose age debarred them from active military service, decided to organize a medical Reserve Corps and through this to offer their professional services to the Government during the war.

Recognizing that in civil practice, physicians depended upon the coöperation of the pharmacists and that pharmacy formed an important link in the ethical practice of medicine, this meeting of physicians adopted a motion suggesting that a similar reserve pharmaceutical corps be organized to coöperate with the medical corps in rendering efficient service to the Government, if the need should arise. The following pharmaceutical and drug trade organizations of Philadelphia were represented at that meeting: The Philadelphia Branch of the American Pharmaceutical Association, The Philadelphia Association of Retail Druggists, The Philadelphia Drug Exchange, and the Philadelphia College of Pharmacy. The representatives of these organizations called a joint meeting of their members at the Philadelphia College of Pharmacy on June 25, at 8 P.M. to take action upon the suggestion emanating from the meeting of June 20th, and to determine the best method of mobilizing the pharmaceutical interests to the support of the Government.

It is a peculiar coincidence that the American Pharmaceutical Association was organized in the Philadelphia College of Pharmacy in 1852, and that the National Pharmaceutical Service Association, sixty-five years later, owes its inception and organization to a meeting held in the same college. At this meeting it was pointed out that a medical reserve corps was a very appropriate organization to support the medical corps of the Army, but as no pharmaceutical corps was now established in the Army, a reserve pharmaceutical corps was not practicable.

The objects of this Association as set forth in the preamble and constitution adopted, are:

> To mobilize all of the pharmaceutical interests to the support of the Nation; to protect the lives and health of those in the military service of the country by providing supplies of dependable medicine and educated pharmaceutical service for the dispensing thereof; to develop the pharmaceutical service of the Government according to the most advanced professional standard; to secure the establishment of a pharmaceutical corps in the U. S. Army, with ranking commensurate to the services rendered by the enlisted pharmacists; to improve the standing of the pharmacists in the Navy; to secure pharmaceutical representation on the Advisory Council to the Committee on National Defense; to coöperate with the Government and the medical profession in providing the best medical attention for those in the service.

The growth of the Association was comparatively rapid and its propaganda for the recognition of pharmaceutical service in the departments of the Government has spread all over the country. It was at once seen that the army, with its preponderate need for men and for medical service, offered alike the greatest need and the greatest opportunity for approved pharmaceutical service. The absence of a pharmaceutical corps in the United States Army, although such corps have been established in most of the foreign armies and are rendering efficient service therein, has for many years been recognized as a defect in the medical department of our army, and various pharmaceutical organizations, notably the American Pharmaceutical Association, have for years advocated the establishment of a pharmaceutical corps with appropriate rank as a branch of the medical department of the army.

An effort was made to obtain an interview with Surgeon-General Gorgas for the purpose of presenting the need for a pharmaceutical corps as a branch of the medical service of the Army. On July 24, 1917, a conference was held between a Board of Army Medical Officers appointed by the Surgeon-General and a committee composed of Samuel L. Hilton the Chairman of the Committee on National Defense of the American Pharmaceutical Association and Eugene G. Eberle, Joseph W. England and George M. Beringer representing this Association. Pursuant to this conference, a formal brief was filed with the Surgeon-General setting forth in further detail, the work of the Pharmaceutical Corps in foreign armies and the need for such in the army of the United States. This brief was very widely circulated and has been the basis of many of the arguments in favor of a pharmaceutical corps in the army, that have since appeared in the pharmaceutical press, and newspapers of the country.

Shortly after the organization of the National Pharmaceutical Service Association, it was learned that Congressman George W. Edmonds of Pennsylvania, who in his earlier days had been a pharmacist, approved the object of the Association and the purpose to secure a Pharmaceutical Corps in the army and that he would be willing to introduce and further the passage of a measure having this in view. Thus, it became one of the first duties of your Executive Committee to prepare the draft of an act of Congress which was subsequently introduced in Congress as H. R. No. 5531, and commonly spoken of as the Edmonds Bill.

Quite naturally, a bill proposing such an innovation in the methods so long in vogue in the medical department of the United States Army met with some criticism and some opposition. The Surgeon-General was averse to such a reorganization of the medical department during the progress of the war. For the most part, the criticism published evidenced prejudice, lack of knowledge of the duties of the pharmaceutical corps in foreign armies or a misunderstanding of the provisions of the Bill. Constructive criticisms are desirable so that any real defects in the measure may be corrected.

At the hearing held on the Edmonds Bill before the Committee on Military Affairs of the House of Representatives on March 19, 1918, this Association was well represented and in addition to the verbal arguments, a formal brief was submitted which has likewise been published in the pharmaceutical journals.

From the first, your officers realized that the Association was engaged in a campaign of education and that to arouse the public to the actual conditions under which medicines are supplied to the sick and wounded in the military service of the Nation and the moulding of public opinion whereby Congress would be compelled to authorize the modernizing of this branch of the medical service, and to assure to our soldiers the supervision and care of trained pharmacists for the dispensing of needed medicines, was no small task.

This propaganda has been carried on as extensively as the means at our command permitted. We have prepared and disseminated literature setting forth the service of pharmaceutical corps in foreign armies, especially the exemplary work of this corps in the armies of France, and the existing need for such service in our own army.

The indorsement of the movement by the American Medical Association was secured and its influential journal has editorially cordially favored the creation of a pharmaceutical corps as a need of the army medical service. A number of the other medical associations have likewise by resolution endorsed the Edmonds Bill and the medical journals have generally supported the movement. The National, State and local pharmaceutical associations have cooperated and the pharmaceutical press has devoted much space in energetically advocating our cause.

Thousands of our petitions have been distributed and scores of these signed by influential citizens have been filed with Congress. Hundreds of letters have been addressed to congressmen, senators and departmental officials urging the necessity for the proper dispensing of medicines necessary to conserve the health of our soldiers. The campaign of education thus initiated has undoubtedly had considerable effect.

This Association has been actively preparing and disseminating literature relative to the pharmaceutical service in the U. S. Army and many of the articles appearing in the public press have been inspired by our literature or the personal effort of members. It is safe to say that during the eighteen months that have elapsed since the organization of the National Pharmaceutical Service Association more has been done toward enlightening the American public on the lack of scientific pharmacy in the U. S. Army than had been accomplished in all the years of prior agitation on the subject.

The work of the National Pharmaceutical Service Association is not done. Although this war may be at an end, our efforts must not cease until an approved modern dispensing of the medicines and the best of medical attendance is assured to every man in our Nation's army and navy and a proper recognition for the pharmacists engaged in the Government service is established. This necessity has long been recognized by some and is now understood and demanded by more of our people than ever before. The American people expect that their soldiers

and sailors shall be given efficient medical attention, comparable at least with that which they received while in civil life and the increasing current of public sentiment to secure this end is marked and is a welcome indication of the progress of the propaganda and that our campaign of education has not been futile.

Every educational movement must be continued throughout a number of years before definite results are obtained and we may now consider that we are entering the second stage of our campaign. We recall that the Food and Drugs Act became a law only after the agitation of a well organized movement had been carried on for a quarter of a century. Of the final results of our efforts in behalf of a pharmaceutical corps in the U. S. Army, there can be no doubt as our aims are along the lines of modern medical classification and scientific military progress that have already been adopted by most of the progressive nations.

The prospects for the enactment of a law embodying the principles contended for in the Edmonds' Bill are brighter than ever before. Even though the Edmonds Bill has not been brought out of the Committee on Military affairs and in deference to the wish of the previous Surgeon-General has not been acted upon, we know that many prominent and influential members of Congress have expressed themselves as favorable to the objects advocated and we believe that we are fully warranted in our opinion that the sentiment in this branch was so strong that the Bill would have passed the House if it had been voted upon.

Now that the war is over, the objection of the former Surgeon-General to a reorganization of the Medical Department of the Army no longer can hold. It is becoming more apparent that the attitude of that Department was due to a misunderstanding of the desires of pharmacy and the purposes that a pharmaceutical corps in the army should serve and it is an important part of the duty of your officers and executive committee to explain away all grounds for such a lack of appreciation of the services that pharmacy can and will render the Medical Department of the Army if opportunity be afforded.

The reorganization of the Army and of its Medical Department is sure to receive the early consideration of Congress and in any act reorganizing this branch of the army service the principles for which we have been contending must be incorporated. Our efforts are now being concentrated to secure in these reorganization laws a fair recognition of pharmacy and the establishment of a pharmaceutical corps, even though in the Army in peace times it be but a cadre that may be readily extended in times of need to the necessities of the Nation.

This organization must be kept intact and actively continue the work that has been mapped out for it. It must maintain its energetic efforts and propaganda until the objects for which it was organized are achieved. To lose heart at this time, would mean the sacrifice of all of the progress that has already been made and destroy the hope of accomplishing the worthy objects and aims for which pharmacists have been contending for so many years and for the attaining of which the National Pharmaceutical Service Association was organized. To carry on this work to a successful conclusion this Association must have the loyal support of the body pharmaceutic and its membership and its treasury should indicate no lack of interest on the part of the druggists of the United States.

THE APOTHECARY, A LITERARY STUDY.

BY EDWARD KREMERS.

II. FRA ANGELICO, an Italian Colleague.

Fra Angelico is not a priest who delivers tirades against the substitution practices of the apothecaries,* but an apothecary himself. Neither is he the apothecary of a monastery of the renaissance, but a modern lay representative of his calling. Fra Angelico is the nickname of Signor Angelo, who has a monopoly on everything pharmaceutical in a little God forsaken village up in the mountains on the border of the Sabine and "Albanian" hills, not distant from Rome.

It is in his shop where toward evening the gentry of the village meets: the priest, the schoolmaster, the surgeon, the tax commissioner and several "benestanti" who do not hold office but whose faces reflect the abundant harvest of olives and grapes of the previous season. Not only is the apothecary shop the place of rendezvous of this select circle, but the apothecary himself is its principal figure. No one dares contradict him, especially if, before beginning a longer speech, he brushes his large silver spectacles on his coat sleeves and begins thus: "*Ecco, signori miei*, this is the way it is."

At the time he is introduced to the literary public he is somewhat advanced in years, *viz.*, fifty-five years of age and his bald head is surrounded by a circle of short, black hair, hence the nickname given to him by his fellow citizens.

Only twice Signor Angelo has been out of his nest in the mountains. Both times he was in Rome, which to him is the world. Hence he talks positively about anything and everything. His other information has been drawn from a few books that have been picked up in a haphazard way and which constitute his library. However, Signor Angelo is something more than an apothecary and the head of the village gentry, he is a poet. Neither is he a man of leisure who dashes off a bit of verse on a special occasion for the sake of entertainment. He is a poet by the grace of God, for he writes because he cannot do otherwise. When of an evening he steps to the window and sees the moon rise over the ragged hills and the firefly flitting in his garden, the situation becomes irresistible and he dashes off sonnet after sonnet. He is even an honorary member of the Arcadia, a circle of poets in Rome.

Yet Fra Angelico is not the hero of a story, he is but its raconteur. The hero is Barbarossa[1] and the heroine is Erminia with whom everyone, including our apothecary has been in love one time or other. This, however, was some years ago when Signor Angelo was younger and before the tragic end occurred. Indeed, our faithful apothecary is still in love with her and it is really her memory that inspires him to write sonnets.

It was after a stay in Rome, that Paul Heyse was overcome with an insatiable desire for solitude. So he went into the Sabine hills and found this forlorn village where he had intended to stop for a day. Yet he remained a fortnight. He avoided the two inns where the German painters were quartered, and found a

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* *Comp. Abraham a Santa Clara, Gargantua and Garzoni.*

[1] Barbarossa, a "Novelle" by Paul Heyse. Vol. 5, p. 126 of his "*Gesammelte Werke.*" *Verlag von Wilhelm Hertz*, Berlin, 1878.

hospitable roof in the apothecary shop. The apothecary had the greatest patience with Heyse's poor command of the Italian language, but he abused the author's patience by reading two dozen sonnets at a sitting. Heyse was generous enough to listen patiently and not to reveal to his host that he was a writer by profession.

Thus matters took their course until one day the author asked his host why he had not married. With some reluctance the apothecary enters upon the theme. He admits that he once was in love with a girl who possessed all the charms which Apollines found in a hundred contemporary women when he painted his Venus. She was a very poor girl, yet she rejected him as she did all suitors, until one day there came a foreigner, a Swedish general.

"*Ecco, amico mio,* this is the way it was," he begins his story one evening about nine o'clock. With a sigh he had trimmed the lamp, leaned back in his chair behind the counter, half closed his eyes and placed his hands into the pockets of his jacket. The place in front of the shop was deserted. The splashing of the fountain was the only noise audible from without and the snoring of the apprentice who slept in the adjoining chamber, from within. After a long pause he began as was his custom, "*Ecco, amico mio.*"

But the story of Erminia and her lovers has no particular pharmaceutical elements though told by an apothecary. However, it is told in the vivacious and fascinating style of Paul Heyse and is well worth reading. Finally, it may be of interest to note that the same author has at least twice described an apothecary in some detail: this Italian representative of an out of the way place (1869) and a German representative of a small residential town that is just being forced to awaken from its long sleep of several centuries of self contentment.

MRS. EUGENE G. EBERLE.

It is with sincere sorrow that we record the death on February 9, 1919, of Mrs. Eugene G. Eberle, wife of the Editor of the JOURNAL. Mrs. Eberle was of Texas birth, and came with Mr. Eberle to Philadelphia a few years ago when the JOURNAL office was moved to this city.

Mrs. Eberle possessed a peculiarly beautiful and self-sacrificing nature, the sort of woman who seemed to embody in concrete form the highest ideals of a true wife and mother. She added to the usual charm of the Southern gentlewoman a rare graciousness of manner which endeared her to every one she met—a truly lovely woman and a worthy helpmate of her husband.

She leaves two daughters, Mrs. Briggs and Mrs. Gibbs, and two sons, Ambrose Ryan and Joseph Ryan. Interment was at Honey Grove, Texas, the place of her birth. Our sympathy goes out to Mr. Eberle and his family in their sad bereavement.

JOESPH W. ENGLAND.

PROCEEDINGS OF THE ANNUAL MEETING OF THE NATIONAL DRUG TRADE CONFERENCE HELD AT THE HOTEL EMERSON, BALTIMORE, JANUARY 7, 1919.

MORNING SESSION.

The meeting was called to order by President James H. Beal at 10.30 A.M.

The minutes of the last annual meeting were approved as printed without reading.

The roll of delegates being called, disclosed the presence and absence, respectively, of the following delegates:

Representing the American Pharmaceutical Association: James H. Beal, John C. Wallace and Samuel L. Hilton.

Representing the National Wholesale Druggists Association: Charles A. West, represented by Frank E. Holliday as alternate, George W. Lattimer, and C. Mahlon Kline.

Representing the National Association of Retail Druggists: Samuel C. Henry and Eugene C. Brokmeyer, James F. Finneran and the alternate he had appointed both being absent.

Representing the American Association of Pharmaceutical Chemists: George C. Hall, by Harry Noonan, alternate; W. C. Abbott, by J. H. Foy, alternate, and B. L. Maltbie.

Representing the American Drug Manufacturers Association: Charles M. Woodruff, Franklin Black at the forenoon session in person, and at the afternoon session by R. C. Stofer, alternate, and Fred B. Kilmer.

Representing the Proprietary Association of America: Fred K. Fernald by Frank A. Blair, alternate, Harry B. Thompson, and Philip I. Heuisler.

Representing the National Association Boards of Pharmacy: David R. Millard and W. T. Kerfoot, Jr., H. Lionel Meredith being absent.

REPORT OF EXECUTIVE COMMITTEE.

The Executive Committee then submitted the following report:

Report of a meeting of the Executive Committee of the National Drug Trade Conference held at the Hotel Emerson, Baltimore, Md., on the 6th day of January, 1919, at 2 o'clock P.M., pursuant to a call of the President dated December 17, 1918.

Meeting called to order by the President at 2.45 P.M.

President James H. Beal, Secretary Charles M. Woodruff and members George W. Lattimer and John C. Wallace present. Dr. A. R. L. Dohme came in later before the meeting was over.

A communication from the Chairman of the War Service Executive Committee of American Industries of the Chamber of Commerce of the United States of America was read and referred to the Conference.

The Secretary-Treasurer then read the following financial report which was received and referred to an auditing committee consisting of Mr. Wallace and Mr. Lattimer, with instructions to report to the Conference at the meeting called to be held on January 7, 1919.

FINANCIAL REPORT.

TO THE OFFICERS AND DELEGATES OF THE NATIONAL DRUG TRADE CONFERENCE:

I hereby submit my financial report to January 1, 1919:

RECEIPTS.

Balance on hand January 1, 1918	$373.18
Received from Association Assessments	350.00
Check No. 40 drawn own account by mistake and recharged (see check No. 42)	13.73
Total	$736.91

EXPENDITURES.

Check No.	'18,	Payee.	Account.	Amount.
33	1/11	E. G. Eberle	Floral spray, Prof. Remington	$ 10.00
34	1/25	Western Union	Telegrams	2.79
35	2/6	U. S. Chamber of Commerce	Dues for 1918	10.00
36	2/7	Parke, Davis & Co.	Printing Memorials and Officers for 1918	18.57
37	3/15	John C. Wallace	Telegrams	10.79
38	3/21	C. M. Woodruff	Letterheads and postage	8.88
39	4/9	American Pharmaceutical Assn.	Printing Proceedings	6.60
40		James H. Beal	Expenses to Chicago	13.73
41	7/5	James H. Beal	Stationery and postage	14.00
42	7/17	C. M. Woodruff	Postage and check 40; see receipts	18.23
43	8/19	C. M. Woodruff	One-half expenses attending executive meeting at Chicago	33.00
44	9/2	C. M. Woodruff	One-half expenses attending special meeting at Baltimore	56.67
45	10/2	John C. Wallace	Expenses	12.75
46	10/3	Geo. C. King Ptg. Co.	Printing ordered at September, 1918 meeting	37.50
47	10/4	W. U. Tel. Co.	Telegrams	1.16
48	12/27	U. S. Chamber of Commerce	January Nation's Business	3.00
49	12/31	C. M. Woodruff	Postage, telegrams and manifolding.	11.00
		Total		$268.67

SUMMARY.

Receipts	$736.91
Expenditures	268.67
Bal. Jan. 1, 1919	$468.24

The credentials of delegates and alternates were then read and approved. (For list of delegates and alternates see above.)

President Beal moved that any officer or member of a standing committee who had not been re-elected or re-appointed as a delegate to the Conference be held to be entitled to act as such officer or member until his successor had been elected or appointed.

Secretary Woodruff seconded the motion, and it was put to vote and unanimously carried.

A communication to the Conference from the National Association of Manufacturers of the United States of America urging opposition to proposed legislation compelling the use of the metric system was then read and referred to the Conference without recommendation.

A communication dated December 18, 1918, from the Hon. Joseph E. Ransdell, United States Senator from Louisiana, inviting the Conference to send representative to a conference to be held at the auditorium of the Smithsonian Institution, January 22 and 23, 1919, on the subject of our merchant marine, was read and referred to the Conference with the recommendation that such representatives be sent.

Secretary Woodruff then read several amendments to the Code of Rules and Regulations, which were discussed, modified and amended and referred to the Conference. (See proceedings of afternoon session.)

An informal discussion of Harrison Act features of the War Revenue measure then followed. The discussion related particularly to the so-called McCumber amendment providing for the keeping of records of sales of exempted items, and

ended in an understanding that if President Beal could be provided with a copy of the amendment he would prepare resolutions to be presented to the Conference.

There being no further business the Committee adjourned.

(*Signed*) JAMES H. BEAL, *President.*
CHARLES M. WOODRUFF, *Secretary.*

The committee appointed to audit the account of the Secretary-Treasurer submitted the following report:

TO THE PRESIDENT, OFFICERS AND DELEGATES TO THE NATIONAL DRUG TRADE CONFERENCE:

Gentlemen:

Your committee appointed to audit the account of the Secretary-Treasurer have performed that duty, find it correct and submit the following:

DR.

January 1, 1918	To balance on hand	$373.18
	To assessments received	350.00
		$723.18

CR.

By vouchers paid	254.94
Balance on hand 1/1/19	468.24
	$723.18

JOHN C. WALLACE
GEO. W. LATTIMER } *Committee.*

The report was received, approved and ordered placed on file.

The following communication referred to the Conference by the Executive Committee without recommendation was read, ordered received and placed on file. It was remarked by one delegate that the communication amounted to a commendation of the action long since taken by the drug industry; and by another delegate that the communication evinced a change of heart on the part of the United States Chamber of Commerce which was now recommending and urging what it had formerly discouraged as out of harmony with the general purposes of the Chamber of Commerce of the United States of America.

To National Trade Associations:

The recent conference of War Service Committees held at Atlantic City, under the auspices of the Chamber of Commerce of the United States, made a declaration regarding the importance and the development of National Trade Associations. This declaration we take pleasure in placing before you, for your information. It is as follows:

"'The experiences of the war have clearly demonstrated the value of national trade organizations and their service to the country as well as to industry.

"'This conference heartily approves the plan of organizing each industry in the country in a representative national trade association and expresses the belief that every dealer, jobber, manufacturer, and producer of raw materials should be a member of the national organization in his trade and cordially support it in its work.'

"Very truly yours,
JOSEPH H. DEFREES,
Chairman, War Service Executive,
Committee of American Industries."

A communication from the National Association of Manufacturers of the United States of America urging opposition to proposed measures for the compulsory adoption of the metric system by the United States, and referred to the Conference by the Executive Committee without recommendation, was read and after remarks by W. L. Crounse and Delegates Holliday and Wallace ordered laid on the table.

The communication dated December 18, 1918, from the Hon. Joseph E. Ransdell, referred to the Conference by the Executive Committee, inviting the Conference to send representatives to a conference to be held at the auditorium of the Smithsonian Institution January 22 and 23, 1919, on the subject of our "Merchant Marine" was read, the recommendation of the Conference concurred in and the President of the Conference authorized to appoint representatives.

Secretary Woodruff then gave notice that at the afternoon session he would move the adoption of the amendments to the Code of Rules and Regulations referred by the Executive Committee to the Conference. These amendments were informally discussed, some changes made and laid over until the afternoon session for action. As finally adopted, they will be found in the proceedings of the afternoon session.

The question of a proper exemption from alcoholic legislation so as to permit the sale of legitimate preparations containing alcohol was then discussed at considerable length and upon motion duly made and carried Delegates Thompson, Brokmeyer and Crounse, alternate for C. Mahlon Kline, were appointed a special committee to report something concrete at the afternoon session. The President then named Delegates Wallace, Henry, Black and Millard, and Alternates Holliday, Foy and Blair as a Committee on Nominations.

The morning session of the Conference then adjourned to meet at 2.30 in the afternoon.

AFTERNOON SESSION.

Session called to order at 3.00 P.M., all delegates and alternates being present. Delegate C. Mahlon Kline, who was not present in the morning, sat during the afternoon session.

A communication from Delegate Black was read announcing that he would not be able to remain during the afternoon session and had therefore appointed R. C. Stofer as his alternate for the rest of the meeting.

The formal adoption of the several amendments, notice of which given in the morning, was moved by Secretary Charles M. Woodruff and supported by Delegate Henry. They were first adopted seriatim and then as a whole. The amendments as finally adopted are as follows:

Section two: Members and Delegates.—The Conference shall consist of three delegates from each of the following organizations:

The American Pharmaceutical Association
The National Wholesale Druggists Association
The National Association of Retail Druggists
The American Association of Pharmaceutical Chemists
The American Drug Manufacturers Association
The Proprietary Association of America
The National Association Boards of Pharmacy

and three delegates from each of such other national pharmaceutical organizations as may be hereafter admitted to membership by a unanimous vote at any regularly called meeting of the Conference at which all constituent organizations are represented. Such delegates shall be elected or appointed, as each association may determine, during the year preceding the annual meeting, and shall serve for the annual meeting following their election or appointment, and until the next annual meeting; or until their successors are elected or appointed. The presence of nine delegates shall be necessary for a quorum at any meeting of the Conference.

Duly appointed representatives of medical or pharmaceutical organizations not members of the Conference, or other persons may be granted the privileges of the floor by vote.

All votes for the admission of new members, or granting the privileges of the floor, and all discussions relating thereto, shall be had in executive session.

Delegates who are unable to attend any meeting may designate in writing or by other means satisfactory to the Conference persons who may act as their alternates and such alternates shall have all of the rights and privileges of the delegates whom they represent.

Section three: Officers and Committees.—The officers of the Conference shall consist of a President, a Vice-President, and a Secretary-Treasurer. They shall be elected by ballot at the regular meeting and shall serve during the year and until

the close of the next annual meeting, or until their successors are duly elected; provided the President and the Secretary-Treasurer shall be delegates from different organizations.

The Secretary-Treasurer shall be the custodian of the funds of the Conference, which he shall deposit in some depository to be designated by the Executive Committee subject to withdrawal upon his order.

There shall be a standing committee to be known as the Executive Committee, which shall consist of the President, the Secretary-Treasurer and one member from each delegation except the delegation of which the President and the Secretary-Treasurer are members, each such member to be elected by the delegates from the organization which he represents on the Committee.

The Executive Committee shall act as a Committee on Credentials, and shall have charge of the business of the Conference during intervals between meetings, all of its actions being subject to review by the Conference.

Special committees shall be appointed by the President unless otherwise provided for by motion.

Section four: Meetings.—The Conference shall hold an annual meeting at such hour and place, and on such day between the first day of November and the fifteenth day of December of each year as the President may determine.

Special meetings may be called by the President at any time and shall be called when so ordered by the Executive Committee, or when so requested in writing by five duly appointed delegates. Except in case of emergency not less than ten days' notice in writing shall be given of the time and place of all regular or called meetings.

It was further moved to amend section three by adding thereto the following:

"The actual traveling, hotel and incidental expenses of the members of the Executive Committee in attending any meeting of the Committee not held during the week of any meeting of the Conference shall be paid out of the funds of the Conference."

It was further moved to amend section five by adding thereto the following:

"On all motions and resolutions except motions to adjourn each delegation shall vote as a unit and the vote shall be announced by the member of the delegation representing it on the Executive Committee, who shall be chairman of the delegation for that purpose."

The motion to adopt this amendment was laid on the table.

The Nominating Committee then reported the following nominations:

President: James H. Beal, representing the American Pharmaceutical Association.

Vice-President: Samuel C. Henry, representing the National Association of Retail Druggists.

Secretary-Treasurer: Charles M. Woodruff, representing the American Drug Manufacturers Association.

A call of the other constituent organizations was had and the following members of the Executive Committee announced by the respective organizations named:

By the National Wholesale Druggists Association: George W. Lattimer.

By the National Association of Retail Druggists: James F. Finneran.

By the American Association of Pharmaceutical Chemists: Dr. W. C. Abbott.

By the Proprietary Association of America: Harry B. Thompson.

By the National Association Boards of Pharmacy: Harry L. Meredith.

On motion the Secretary was then unanimously ordered to cast the ballot of the Conference for the officers and committeemen nominated, which he formally did, thereby constituting the President, the Secretary-Treasurer and the members announced by the respective organizations the Executive Committee for the ensuing year.

Secretary Woodruff then moved that the Conference continue its affiliation with the Chamber of Commerce of the United States of America and that Delegate Hilton, of Washington, D. C., be appointed councilor. Motion unanimously carried.

The special committee appointed to report some concrete action on the subject of alcohol legislation then submitted the following:

Your Committee respectfully suggests that the following amendment to such Alcohol Legislation as may be introduced into the various state legislatures, be adopted:

Provided, that nothing in this act shall prevent the manufacture and sale of such preparations as flavoring extracts, essences, tinctures, perfumes or remedies containing drugs or medicines which do not contain more alcohol than is necessary for legitimate purposes for extraction, solution or preservation, and which contain drugs in sufficient quantity to medicate such compounds, and which are sold for legitimate and lawful purposes and not as beverages.

Your Committee respectfully represents that the form of exemption herein submitted is taken from the Arizona statute which was enacted by the legislature of that state for the purpose of giving effect to the provisions of a constitutional amendment providing against the manufacture and sale of intoxicating liquors.

Your Committee further represents that said exemption contained in such statute has been so construed by the prosecuting attorneys of that state, as to permit the sale of legitimate preparations containing alcohol, but has further been construed to prevent the sale of preparations containing an excess of alcohol, and which are capable of being used as a beverage, and to prevent the sale of legitimate preparations under circumstances from which the seller could deduce an intention to use them as beverages.

We respectfully ask that the National Drug Trade Conference shall approve the form of exemption herein submitted and shall urge its constituent members to use legitimate efforts to secure its adoption as a part of such legislation as may be introduced against the sale of intoxicating liquors, and further respectfully ask that a Committee be appointed to submit the exemption and induce if possible its acceptance by the Anti-Saloon League or other persons proposing legislation against the sale of intoxicating liquors.

H. B. THOMPSON.
E. C. BROKMEYER.
W. L. CROUNSE.

The report was received and adopted, and the following gentlemen appointed a committee to carry out the recommendation of the report: Delegates Henry, Hilton, Kline, Stofer, Foy, Blair and Kerfoot.

After considerable discussion of the so-called McCumber amendment to the War Revenue Act requiring a record to be kept of sales of items coming under the operation of Section 6 of the Harrison Act, Delegate Stofer moved that President Beal be requested to prepare a brief upon the subject and authorized to call to his assistance such members of the Conference as he chose; said brief when prepared to be presented to the Conferences for their consideration.

The motion was duly seconded and carried.

President Beal announced that he selected as his assistants all the members of the Conference and requested suggestions.

There being no further business the Conference adjourned subject to the call of the President.

JAMES H. BEAL, *President.*
CHARLES M. WOODRUFF, *Secretary-Treasurer.*

COMMITTEE APPOINTMENTS.

President Beal announces the following special committee appointments.

Committee on Pharmaceutical Corps: Samuel C. Henry, *Chairman;* George C. Hall and S. L. Hilton.

Committee on Alcohol Legislation: S. L. Hilton, *Chairman;* Charles A. West and James F. Finneran.

Committee on Anti-narcotic Legislation: John C. Wallace, *Chairman;* Fred K. Fernald and Eugene C. Brokmeyer.

Committee on Formulas and Labels: Harry B. Thompson, *Chairman;* C. Mahlon Kline and B. L. Maltbie.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

CHICAGO.

The ninety-ninth monthly meeting of the Chicago Branch, American Pharmaceutical Association, was held Friday evening, January 24, 1919, at the City Club, with Vice-President A. H. Clark in the chair. The meeting was preceded by a dinner. At eight o'clock the business session was called and opened with the annual reports of officers and committees. Secretary-Treasurer Gathercoal reported for 1918 an average attendance of 45 at the meetings, and 71 new members received, with 32 lost, leaving a present membership of 204. Receipts for the year totalled $496 and disbursements $454, leaving a balance on hand of $42.

The secretary reported that the data for the Honor Roll of Illinois pharmacists is now coming in. It was moved that the original questionnaires be deposited with the University of Illinois School of Pharmacy and that the Illinois Pharmaceutical Association be requested to publish a preliminary roll in installments, if need be, in the state-wide edition of C. R. D. A. News and a complete roll under various classifications in the next annual Proceedings. A vote of thanks was extended to the Illinois State Department of Registration and Education, and to Supt. F. C. Dodds in particular, for the excellent service rendered in obtaining the data for the Honor Roll.

Special attention was called to the next Branch meeting, which will be the one-hundredth monthly meeting. Mr. Wilbur L. Scoville of Detroit and Dr. Geo. D. Beal of Urbana have consented to address the Branch on that occasion, and every member is urged to be present and to extend our invitation to every Chicago druggist to hear these addresses. The Branch adopted a motion to invite the members of the Chicago Section of the American Chemical Society to attend this meeting.

The report of the Nominating Committee was then called for and the Chairman reported as follows: *President*, A. H. Clark; *First Vice-President*, E. Von Herrmann; *Second Vice-President*, Otto Mentz; *Third Vice-President*, Ad. Umenhofer; *Council Member*, Clyde M. Snow; *Membership*, O. C. Buss; *Legislation*, James H. Wells; *Practice*, I. A. Becker; *Medical Relations*, Dr. Bernard Fantus; *Publicity*, Thos. H. Potts, and *Secretary-Treasurer*, E. N. Gathercoal. This report was unanimously adopted.

The topic of discussion for the evening was "Pharmaceutical Reconstruction." Mr. J. H. Riemenschneider introduced the discussion, speaking from the retailers' standpoint. He was followed by Dr. A. S. Burdick of the Abbott Laboratories, who outlined some of the benefits and problems of the reconstruction period from the pharmaceutical manufacturers' viewpoint, and Secretary S. C. Henry of the N. A. R. D. spoke from the legislative side of the question. Mr. C. P. Van Schaack, who was to have represented the wholesale druggists, unfortunately was forced to send his regrets.

Each of these talks called forth not only the applause of the audience but also a wide discussion. A résumé of each is appended.

Pharmaceutical Reconstruction from the Standpoint of the Retail Druggist. Summary of an address by J. H. Riemenschneider.

"I am decidedly optimistic regarding the immediate future of retail pharmacy. The retailer has never known so prosperous a year as the one just passed. Not only has the volume of business increased, but the percentage of gross profit has increased, for so much of the business has been in prescriptions and medicines, yet the overhead expense has not so greatly advanced, for although the salaries of clerks has markedly increased the

number of clerks employed has been reduced, because of the scarcity of clerks and the reduction in hours of business.

"Prices of goods are coming down but slowly and it will be a long time if ever before pre-war prices are reached. Labor is high, raw materials are high and the normal domestic and foreign markets never better. Hence a disastrous slump in prices, except of a few items with which the government is heavily stocked, need not be expected. Retail prices will naturally fall rather more slowly than the jobbing prices.

"My advice to the retailer is this: buy according to your needs and your turnover, not heavily, nor yet too sparingly.

"In regard to overhead expenses bear in mind that with the passing out of all the saloons, rents of retail stores are not going to be higher for some time to come. Clerks' salaries may go somewhat lower but let us never permit them to reach the old pre-war levels. A business or profession that cannot or will not pay its workers a reasonable compensation commensurate with high education and moral standards must expect to draw only the riff-raff of society. I hope pharmacy will never again see the day when she will be disgraced by qualified drug clerks working for $75.00 per month.

"Among other blessings in disguise that the war has brought to the retail druggist is the income tax—for that tax has made him keep books and take inventory. With a real knowledge of his financial conditions he can eliminate leaks, make all of the departments profitable and meet changing conditions on a solid basis.

"Another blessing of similar nature is prohibition. The retail druggist has long taken abuse and reprobation, most of it unjust and uncalled for, as a retail liquor dealer. Now all retail druggists must unite in their aim to remove this stigma forever. We should stand solidly against including any intoxicating liquor as a medicine. All forms of alcoholic liquors are out of my store for good. This stand will also tend to eliminate possible competition from former saloon owners.

"Nearly all druggists have accumulated real profits this past year. Care for your resources now—hold your profits and surplus tightly—don't invest in uncalled for luxuries nor wild-cat schemes. Conserve your resources and there will be no need in the immediate future for any retail druggist to be forced out of business.

Pharmaceutical Reconstruction from the Manufacturers' Standpoint, by Dr. A. S. Burdick, Vice-President Abbott Laboratories.

"A few firms, biological and surgical supply manufacturers particularly, made a large amount of money out of the war. Most of the strictly pharmaceutical manufacturing concerns sold to the government under very keen competition and very little war profiteering was practiced. However, nearly or quite all of these concerns have materially increased the volume of their business and the capacity of their plants. When the government wished to place its first order for 193 million compound cathartic pills, the manufacturers' representatives sat up in amazement at the magnitude of the order. There was not gamboge enough in the whole country to make that many C. C. pills. Now, however, we are accustomed to work in these larger terms.

"On top of Government business came the influenza. This world-wide epidemic is perhaps the worst sweep of a disease since the great scourges of the middle ages. The world demand for medicines has been enormous. The demand for many items in the manufacturers' stock increased 300 or 400 percent. Very fortunately the armistice was signed before the full effect of this demand for drugs was felt. And from a strictly business standpoint this influenza demand had a good effect in profitably unloading stocks which in many lines were very large and in clearing the decks for the reconstruction period.

"Prices are going down, especially of certain chemicals and surgical supplies demanded by the government in medical and munitions work and of which great stocks have been accumulated. We hope this reduction will be gradual. The practice of retailers buying from hand to mouth is a very bad one at this time for it creates a vicious circle, a tendency to an unsteady market and financial disaster.

"Chemical and pharmaceutical research work carried out on an enormous scale in connection with war activities is now reacting as a wonderful stimulant for the reconstruction period. You are all informed of the great broadening out along chemical lines, especially in heavy chemicals and synthetic dyes. The production of synthetic chemical medicines has also received a great impetus and many houses are establishing large corps of research

men for the development of new synthetic remedies. The output of such medicines as have so far been manufactured has been very largely taken by the government but these will now be placed in increasing quantity on the market. All of these industries will continue to grow and compete for world trade.

"Standardization of products, of methods of production and of prices are all war benefits accruing to the manufacturers and which will assist wonderfully in reconstruction. Standardization of products applies particularly to the long list of drug preparations that are U. S. P. or N. F. It means too the dropping from the list of many preparations of little medicinal value and that are "slow-sellers." Standardization of prices does not mean that all of the manufacturing houses are going into a combine and establish identical prices for each article on the list but it does mean that if one house carefully estimates the cost of a preparation and adds a reasonable profit no other standard house can manufacture and sell that preparation for a price much lower. If a standardized product made by a standard process must bring a certain minimum price, then if a similar product is offered for sale at a much less price, it is a certainty that something is wrong with the product.

"I am an optimist. The immediate future of pharmaceutical manufacturing is bright. The war has been terrible and yet it has been a great stimulus to endeavor and industry."

E. N. GATHERCOAL, *Secretary.*

LUZERNE COUNTY.

The second regular meeting of the Luzerne County Branch of the American Pharmaceutical Association was held in the Auditorium of the Greater Wilkes-Barre Chamber of Commerce, Monday evening, January 27th. We discontinued our meeting since our organization last September due to the prevalence of Influenza.

At this meeting three candidates for membership in the A. Ph. A. and the local branch were proposed, which brings our membership close to fifty, and more prospects.

A constitution was adopted, with the exception of the amount of local branch dues.

Future meetings will be held at the Hotel Sterling the second Thursday of each month, lunch to be served during the meetings, with the idea of making it a social as well as a business session.

At least one Relief Clerk is to be employed by the Branch, for the use of the members, and more if it is deemed necessary.

The following Committees were appointed for the year:

Professional Relations, W. V. Green, *Chairman.*

Practical Pharmacy, John Lowman, *Chairman.*

Membership, Ellsworth Lynn, *Chairman.*

Commercial Relations, M. Greenstein, *Chairman.*

Banquet, Louis Frank, *Chairman.*

J. D. MORGAN, *Secretary.*

NASHVILLE.

A joint meeting of the Nashville Branch, A. Ph. A., and the Nashville Drug Club, was held in the Commercial Club Rooms, Thursday, January 23, 1919. D. J. Kuhn presided. The Tennessee Board of Pharmacy being in session, members of that body were in attendance at this meeting, as follows: Ed. Sheely, of Memphis; Harry Whitehouse, of Bristol; and M. E. Hutton and Ira B. Clark of Nashville.

Two communications were received in response to inquiries sent out asking what action had been taken by local associations relative to the signing of the pledge not to sell proprietary remedies for venereal diseases. One of these replies was from R. J. Frick, of Louisville, Ky., in which he stated that no action had been taken by their local association as a body, and his advice to the members was that they should use their own judgment. He feared that the signing of this pledge would be used against the druggists later as an admission that the sale of these preparations should be prohibited.

The other communication was from Ed. Sheely, of Memphis, who stated that no action had been taken by the Memphis Retail Druggists' Association, but that most of the retailers had signed the pledge as a war measure. Mr. Sheely stated that he understood that the Government would establish a clinic in Memphis to treat venereal diseases, but so far this had not been done.

Attorney Charles Hune, of the Tennessee State Board of Pharmacy, said that the Tennessee Pharmacy Law, which was passed more than twenty years ago, was now obsolete, and he outlined the draft of a new bill along the lines of the American Pharmaceutical Association Model Pharmacy Law, which may be introduced at this session of the Legislature.

D. J. Kuhn, Ira B. Clark and M. E. Hutton were appointed a committee to canvass Nashville in the interest of pharmacists returning from service, as requested by Chairman F. H. Freericks, of the American Pharmaceutical Association Committee on Soldier and Sailor Pharmacists.

President D. J. Kuhn called the attention of those present to a newspaper report that some druggists were selling denatured alcohol for beverage purposes. It was said that negroes would call for it by crossing their arms over their chest, representing the skull and cross-bones. A strong resolution was adopted discountenancing druggists guilty of selling denatured alcohol for beverage purposes.

WILLIAM R. WHITE,
Secretary.

NEW YORK.

The January, 1919, meeting of the New York Branch of the American Pharmaceutical Association, was called to order by President Turner in the Lecture Hall of the New York College of Pharmacy Building, on Monday evening, the 13th, at 8.15 o'clock.

One hundred and three members and friends were present.

The Treasurer's annual report was received and referred to the Audit Committee.

Member of the Council.—Prof. Jeannot Hostmann brought in no report.

Membership Committee.—No new members were reported.

Fraternal Relations.—Dr. Leon Lascoff had no report to bring in.

Audit Committee.—Dr. Jacob Diner reported that he would go over the Treasurer's annual report.

Education and Legislation.—Mr. R. S. Lehman brought in a report which after some discussion was ordered accepted.

A letter was read from Mr. Frank Freericks regarding the Committee appointed to obtain positions for the returning soldier pharmacists. It was moved, seconded, and carried, that the Branch approve Mr. Freericks' suggestions in that we direct our representatives to the New York Pharmaceutical Conference to suggest that the conference take up this work, and that in addition the Branch vote $25.00 towards the General Fund which is to be collected for this work.

Chairman Schaefer, of the Remington Honor Medal Committee, reported that some money would still have to be collected in order to pay for the die for the medal. It was moved, seconded and carried that the Chairman of this Committee be allowed to send out a request for further donations with the next notice of the regular meeting.

The Chairman of the Nominating Committee recommended that the following officers be elected:

President, Robert S. Lehman.
Vice-President, Jacob H. Rehfuss.
Secretary, Hugo H. Schaefer.
Treasurer, Gustave Horstmann.
Chairman of Audit Committee, Jacob Diner.
Chairman of Committee on Education and Legislation, E. J. Kennedy.
Fraternal Relations, J. Leon Lascoff.
Progress of Pharmacy, George C. Diekman.
Membership Committee, Dr. Charles Fischer.

It was moved, seconded and carried that Hugo Kantrowitz cast one vote unanimously electing the ticket as presented by the Nominating Committee.

Mr. Lehman in a few words thanked the Committee for the honor conferred upon him.

SCIENTIFIC SESSION.

Dr. Paul S. Pittenger read a paper on "Biologic Assays." Considerable discussion followed. A rising vote of thanks was then tendered the speaker and his assistant in appreciation of their efforts.

Under regular procedure the meeting was declared adjourned.

HUGO H. SCHAEFER,
Secretary.

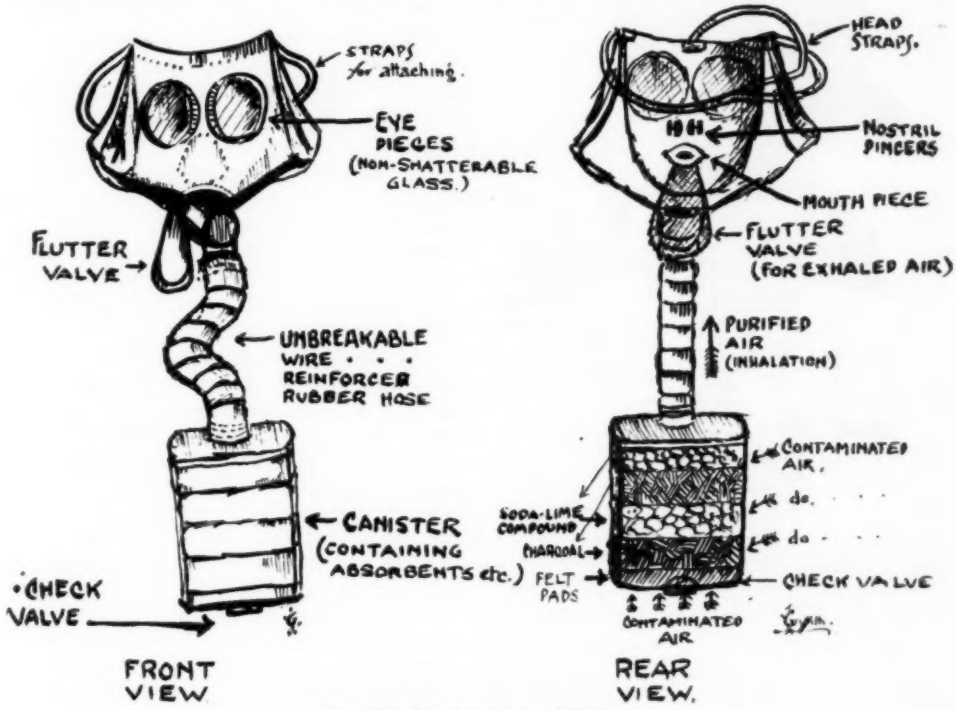
PHILADELPHIA.

The January meeting of the Philadelphia Branch of the American Pharmaceutical Association was held at the Philadelphia College of Pharmacy on Monday evening, January the 21st, with President W. W. McNeary occupying the chair. Business matters dispensed with, the feature of the evening was presented in the nature of a scientific paper read by Dr. Robert P. Fischelis, until recently a sergeant in the Gas Defense Service at the Long Island plant. The title of the paper was "Gas Defense Methods of the U. S. Army." Dr. Fischelis held his audience thoroughly attentive from the first word to the last, and the reading of the paper occupied about ninety minutes. Illustrative material was furnished in the way of a sample mask, complete in every detail and various parts, some old and some of the newest types.

It would not be possible to give a compre-

hensive abstract of the lecture without going to great length and the following quotations are simply given verbatim from an extract of a previous lecture given by Sergeant Fischelis in New York and carefully abstracted in the *Druggists' Circular:*

"Between June 30, 1917, and the signing of the armistice, 2,400,000 gas masks were manufactured on Long Island and sent to France for the American Expeditionary Forces. Not a single soldier who had one of these masks, and who put it on when the signal of gas attack was sounded, was gassed; and not one defect was found in any of the masks issued to the men at the front."



Showing Construction of Masks.

Such was the record of remarkable efficiency attained by the Gas Defense Service of the United States Army, as described by Sergeant Fischelis.

"This meant," he said, in describing the mask, "that the American gas mask was proof against all gases used by the Germans, except mustard gas, and mustard gas is really a volatile liquid, which penetrates cloth and similar substances, rather than a gas. A soldier wearing a gas mask might receive a drop of mustard gas on his sleeve and not know it. In an hour or so the mustard gas would pass through the cloth, reach the flesh and cause a burn which would be very slow and very difficult to heal.

"There seems to be no question but that the knowledge that the United States had perfected the gas mask, had accumulated a tremendous supply of a very deadly gas, and had developed airplanes for gas attacks on a large scale, was one of the factors which impelled the Germans to sue for peace. Chemical warfare had much to do with ending the war."

Sergeant Fischelis demonstrated the component parts of the mask, explaining the need for charcoal as an absorbent of gas, and the method by which this material was combined with soda-lime and permanganate in every mask. The mixture accounted for the high efficiency of the American mask. The charcoal absorbed the gas, and the soda-lime reacted upon the gas absorbed—especially on phosgene gas—to neutralize it.

"Testing masks was a labor of the chemical or control department of the great gas mask factory on Long Island," the Sergeant said. "The masks were tested with actual gas in order to discover defects or leaks. This country used laboratory tests wherever prac-

ticable, in order to spare the men; but France and England insisted that the man-test was the only safe test, and so the man-test was

The Mask in Use.

made. There are men in the Chemical Warfare Service whose heart and lung actions have shown decided deterioration as the result of their work in testing masks with actual gas."

When the armistice was signed, Sergeant Fischelis said, the factory had just perfected a new mask which was proof against the newest and most insidious gas employed by the Germans—a smoke gas, so-called, which could penetrate the charcoal mass used in the masks. This gas he described as really very fine particles of a poisonous substance which entered into the molecular spaces of the charcoal and thence was drawn into the lungs. It presented a new problem, which was finally solved by enclosing the canister of the mask, containing the charcoal, in felt. The felt excluded the smoke gas. This mask, he said, was deemed proof against any gas that the Germans might be able to devise. Quantity production was ready to start on November 4, last; then came the signing of the armistice.

Dr. Fischelis was given a rising vote of thanks for his excellent and carefully given presentation. Discussion of his lecture was lively and was participated in by Messrs. England, Lowe, Stroup, and others. Private Trautwine, of the Chemical Service Section, spoke interestingly of certain phases of the gas production in this country and stated that he would have offered some still more interesting data, were he wearing a red discharge stripe on his coat sleeve. He was still in the service, however, and revealed nothing that he was not supposed or allowed to.

The meeting, the best attended of the season, adjourned at 11 P.M.

IVOR GRIFFITH,
Secretary.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON PATENTS AND TRADEMARKS.*

BY F. E. STEWART, *Chairman.*

Your committee is presenting conclusions in this year's report consisting of concrete statements of the facts and principles presented in former reports. Our reports have been, in a general sense, a protest against the invasion of the pharmaceutical field by the nostrum manufacturers and commercial drug business, and the degradation of the pharmacist to the level of a petty shopkeeper acting as mere sales agents for materia medica products and preparations manufactured under the control of unlicensed practitioners of medicine and pharmacy. We see in this commercialization of what ought to be a professional calling the ruin of all we have been working and hoping for, namely, the restoration of pharmacy to its true position as a branch of medical science and practice working in coöperation with the medical profession in its altruistic service of preventing disease, relieving suffering, and healing the sick—working, not as competitors, but as co-partners, each working in its particular field of practice.

* Abstract of report presented before Section on Legislation and Education, A. Ph. A., Chicago meeting, 1918.

CONCLUSIONS.

(1) The right to imitate or copy the published writings and inventions and discoveries of others is a public right, upon the proper exercise of which civilization in a great measure, depends. Those who attempt by unfair means, to prevent the public from exercising this right are appropriating what does not belong to them and are robbing the public.

(2) The Constitution of the United States (Article I, Section VIII, Clause 8) gives Congress the power to promote progress in science and useful arts by granting authors and inventors the right to the exclusive use of their respective writings and discoveries for limited times; but such grants should never be made except in compliance with the copyright and patent laws and never conferred without adequate proof that these terms have been complied with in such manner as to attain the object above mentioned.

(3) The granting of patents for ready-made prescriptions, consisting of mere aggregations of old and well-known drugs, showing in their inception and preparation no greater skill than naturally to be expected from skilled physicians and pharmacists in the regular routine of practice, hinders progress in medical science and in the useful arts of pharmacy and drug therapy. Moreover, such patents promote self-medication by people who are unacquainted with the nature of disease, and drugs and their uses, who are also incapable of making a diagnosis, are not skilled in the treatment of the sick, and who, depending upon the misleading claims made by the recommendations of manufacturers and dealers in drugs, often neglect to obtain proper medical aid until it is too late to be of service.

(4) The granting of patents for hitherto unproduced chemical substances, merely because they have hitherto been unproduced, and without proper consideration as to whether they are *new* and *useful* inventions, in the proper meaning of the patent law, and without proof that they possess sufficient value to warrant granting to their alleged inventors the valuable privileges pertaining to patent grants, is contrary to wise public policy and should not be permitted.

(5) The advertising of substances as therapeutic inventions, or inventions for nutriment, when they are not inventions in fact, and therefore unworthy of patent protection, promotes unfair competition in trade, and is a fraud upon the public. As this fraud is common, and its existence well known to the public at large, the Patent Office in granting patents for such alleged inventions without proper investigation, becomes partner in a crime against humanity.

(6) The registration of names as trademarks which are to be used afterwards and advertised as the names of the articles themselves, creates and fosters unfair monopoly in the manufacture and sales of such articles, and thus hinders progress in commerce and the arts. As names are not proper subjects of patent or copyright, and as there is no law which grants ownership in names, whether such names are invented or coined or not, such registration inculcates false ideas in regard to the objects and nature of copyright and patent grants, causes confusion in the public mind, and, as each case must be fought out in the courts on its merits, when injunctions are brought for infringements of trademarks, the registration of names which afterwards become currently used as the names of the products themselves, practically creates a *secret* patent system, perpetual in character, whereby the inventors of nothing but names are enabled to obtain monopoly privileges, far more restrictive and valuable than inventors of new and useful inventions are permitted to obtain by patents.

(7) Scientific and professional requirements necessary to observe in rendering the altruistic service which the public has a right to demand in exchange for granting practitioners of medicine and pharmacy exclusive privileges in conducting their respective vocations, necessitates special education and training, and also requires conformance with the rules of practice laid down by these professions for the guidance of members in their relations to each other and to the public at large. These rules obligate members of these closely related and mutually dependent vocations to donate the results of their observations and experiences to the common fund of knowledge, receiving in exchange therefor, the right to freely use the knowledge obtained by the entire profession in carrying out its beneficent work. Therefore, the proper introduction of therapeutic agents to science requires coöperation between competent physicians, pharmacists, chemists, pharmacologists, and clinicians associated with the medical and pharmaceutical schools and colleges; also the coöperation of the professional societies and professional press. Furthermore, these requirements demand that the source or genesis, physical, chemical, physiological and therapeutic properties of each new substance, or "composition of matter," introduced as a

therapeutic agent, shall be published in scientific literature, and impartially discussed by the professional societies and professional press for the purpose of freeing such knowledge from pretense and error; and, furthermore, as therapeutic verdicts can only be obtained as a result of observations carried on under conditions of environment, which eliminate as far as possible the personal equation, and influences of climate, race and social conditions, this altruistic work cannot be properly accomplished when alleged therapeutic inventions are undergoing commercial introduction by advertising. As this research work is carried on in public institutions largely supported by public funds, and as the use of these public institutions for advertising purposes practically converts the entire educational machinery of medicine and pharmacy into a great advertising bureau for the exploitation of such alleged new products, it therefore follows that therapeutic inventions should never be introduced by advertising, but should be left free to science and their manufacture open to competition.

(8) Owing to the fact that commerce in materia medica products is essential to the obtaining of supplies for the use of the medical and pharmaceutical professions in carrying on their respective altruistic vocations, and also required to meet the legitimate demands of the public for domestic practice, the employment of proper commercial methods, including advertising of brands, is not to be condemned. Brands of products may be properly protected by process patents or the registration of brand marks, or word trademarks, provided such word trademarks are used as such, and not employed as the names of the products themselves. Consequently, the name of the product should always appear on the label together with the word trademark, when such is used, and the latter should be displayed in such manner as to clearly indicate that it is intended as a word trademark, and not intended as a generic designation.

For example, "Eagle Brand" condensed milk is advertised in the reading pages of the medical and pharmaceutical journals without interfering with the impartial discussion of condensed milk in the reading columns. But it is apparent that the impartial discussion of the "Eagle Brand Condensed Milk" in the reading columns is an entirely different matter. Discussions relating to the food value or methods of manufacturing condensed milk do not relate to the brand of condensed milk manufactured by Borden, but to condensed milk itself. Consideration of brands, except for special purposes which should be made plain to the reader, belong to the advertising columns exclusively, and the manufacturer should pay for the advertising space, which in this instance, is doubtless the case. No producer should ask publishers to donate free space in their reading columns for advertisements. This is unfair to all concerned, for it misleads the reader, gives unfair advantage to one advertiser at the expense of other advertisers, and throws an unnecessary burden of expense upon the publisher. This example is important for it brings out clearly the unfair advantages demanded by the commercial introducers of monopolized materia medica products claimed by them as new and useful therapeutic inventions. These unfair methods seriously hinder the introduction of such products to science by preventing proper coöperation between medical scientists and the manufacturers engaged in the pharmacal, and pharmaco-chemical industries.

Finally, your committee, in its various reports, has endeavored to present the reasons why the medical profession, and medical scientists, object to the monopoly of therapeutic agents. We have endeavored to emphasize the fact that there can never be proper coöperation between the educational institutions engaged in the teaching of materia medica and drug-therapy, and manufacturers and dealers in materia medica supplies, except upon a professional basis which recognizes the altruistic character of professional service and conforms thereto. We have called your attention to the close relationship that ought to exist between the medical and pharmaceutical professions, and endeavored to show that pharmacy cannot exist as a profession when separated from medicine and conducted as a purely commercial vocation. We have pointed out the fact that the attempt to convert pharmacy into a purely commercial vocation means the degradation of the pharmacist to the level of a petty shop-keeper, the downfall of the pharmaceutical educational system and the colleges of pharmacy, the doing away with the boards of pharmacy and their examinations and licenses to practice, and the depriving of the medical profession and the public of the services which educated pharmacists should render as members of a profession which, under the guidance of proper rules, might become what its advocates have so longed hoped and worked for, *i. e.*, a profession in fact as well as in name. In this connection we have endeavored to show that one of the reasons why pharmacy has not "come into its own" is because of the abuses of the patent and trademark laws, and the unfair monopolies of materia

medica products and preparations obtained by unlicensed practitioners, who have taken advantage of these abuses to protect capital employed in a commercial drug business carried on in competition with licensed practitioners of medicine and pharmacy, and using unfair commercial methods, including misleading advertising, injurious alike to legitimate practice and the public welfare. In proof of all this your committee has furnished evidence which has not been controverted, and is believed to be incontrovertible, and now rests its case with the suggestion that this report, together with the previous reports of this committee, and of the special committee on national legislation for the years which deal largely with the same subjects, be referred to the National Research Council at Washington for consideration and proper action.

COUNCIL BUSINESS

A. PH. A. COUNCIL LETTER NO. 9.

PHILADELPHIA, January 11, 1919.

TO THE MEMBERS OF THE COUNCIL:

Motion No. 11 (*Resignation of Hugo Schaefer as Secretary of Scientific Section*) and *Motion No. 12* (*Appropriation of $25 for Expenses of Committee on Local Branches*) have each received a majority of affirmative votes.

A. G. DuMez of Washington, D. C., has been nominated by E. N. Gathercoal as Secretary of the Scientific Section. The nomination has been seconded by W. B. Day. Are there further nominations?

Motion No. 13 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 56. Rene R. Oca, Separacion 40, Santo Domingo City, Dominican Republic, rec. by Dr. A. Rodriquez and Rene Rodriquez.

No. 57. John Anderson, c/o E. R. Squibb & Son, New Brunswick, N. J., rec. by Charles H. LaWall and Wm. B. Day.

No. 58. Henry Edward Bowles, 240 E. Center St., Pocatello, Idaho, rec. by H. H. Whittlesey and Wm. B. Day.

No. 59. Alvah J. Pope, Cor. Central Ave. and E. 33rd St., Cleveland, Ohio, rec. by Wm. B. Day and J. W. England.

No. 60. Hjalmar Gustaf Anderson Tesch, Soedertelje, Sweden, rec. by A. R. L. Dohme and H. Englehardt.

No. 61. Max Soskin, 439 Brooke Ave., New York, N. Y., rec. by Hugo Schaefer and Jacob Diner.

No. 62. James Clayton Campbell, 463 Concord Ave., Detroit, Mich., rec. by F. F. Ingram, Jr. and Leonard A. Seltzer.

No. 63. Max S. Adler, 219 Verne Street, Tampa, Fla., rec. by D. E. Murphy and M. M. Taylor.

No. 64. Dennette Weymouth Smith, Merryville, La., rec. by Robert T. Grace and Joe W. Peyton.

No. 65. George Elwood Ewe, 353 E. Walnut Lane, Germantown, Phila., Pa., rec. by J. W. England and E. G. Eberle.

No. 66. Charles F. Walker, c/o Medical College of Virginia, Richmond, Va., rec. by Wortley F. Rudd and Wm. B. Day.

No. 67. Edwin Garner Swann, Pharmacist, U. S. Navy Dispensary, Navy Yard, Philadelphia, Pa., rec. by E. G. Eberle and J. W. England.

No. 68. Tachong Lee, 29 14th Ave., Columbus, Ohio, rec. by Azor Thurston and Edward D. Davy.

No. 69. Leonard Bergstein, 509 N. Lake St., Madison, Wis., rec. by Edward Kremers and Nellie Wakeman.

415 N. 33RD STREET.

J. W. ENGLAND, *Secretary*.

A. PH. A. COUNCIL LETTER NO. 10.

PHILADELPHIA, January 22, 1919.

To the Members of the Council:

Motion No. 13 (*Election of Members; applications Nos. 56 to 69 inclusive*) has received a majority of affirmative votes.

Motion No. 14 (*Election of A. G. DuMez as Secretary of Scientific Section*). Moved by E. N. Gathercoal, seconded by W. B. Day, that A. G. DuMez be elected as Secretary of Scientific Section, succeeding Hugo Schaefer, resigned.

The following communication has been received from General Secretary Day:

"The members of the Council will recall in

1914 Professor John Uri Lloyd offered to care for the remainders of the publications of the American Pharmaceutical Association and to supply these on order as needed. At that time, General Secretary and Editor, James H. Beal, had resigned and, upon the acceptance by the Council of Professor Lloyd's offer, the material accumulated at Scio and Columbus was forwarded to Cincinnati where it was planned to store it in the Lloyd Library. However, Professor Lloyd, in making the offer, was not aware of the immense amount of material that had accumulated and, when it arrived, he found that he did not have room for it in the Lloyd Library and was compelled to store it in his warehouse. Here it remained for four years and, in the meantime, Professor Lloyd had inventoried a large part of it and had promptly filled all orders for proceedings and year books.

Meanwhile, the accumulation continued—historical matter was sent by Professor Kremers from Madison, and by Dr. Whelpley from St. Louis, the remainder of the third edition of the National Formulary from Lancaster, and the remainders of successive editions of the Year Book.

The conditions brought about by the great war necessitated the use of a much larger space for storage of drugs and other materials by Lloyd Bros. and demanded every bit of space in the warerooms for this emergency. Accordingly, in November last, Mr. Rouse, General Superintendent for Lloyd Bros., wired me that it would be necessary to store the American Pharmaceutical Association material elsewhere as the warerooms would be needed for large shipments of drugs, just received. I wired back, authorizing Mr. Rouse to store the material temporarily in Cincinnati. He accordingly moved it to a vacant store-room for which we agreed to pay a rental of $25.00 a month, with the understanding that we might remove the material at any time. However, this gave us no facilities for filling orders from the stock and, after advising with the Chairman of the Publication Committee, the Treasurer, and the Chairman of the Finance Committee, I had the material shipped to Chicago so that I might check it up and inventory it and decide upon storage here.

It filled a freight car, there being 160 boxes of books aggregating 42900 pounds in weight. It has already cost us $75.00 for packing and cartage in Cincinnati; $163.49 freight charges and war tax; and $40.00 cartage in Chicago.

I have provisionally stored these boxes in the basement of the School of Pharmacy while I check them up and inventory them. As soon as this inventory is completed, I will report further to the Council with suggestions for the disposal of the property but, meanwhile, it becomes necessary to provide for the expenditures already made by adding to Budget Item No. 4, Miscellaneous, an additional appropriation of $300.

I therefore move that this appropriation—which is approved by the Finance Committee—be granted, and J. A. Koch seconds this motion.

In this connection, I would like also to move that a vote of thanks be extended by the Council to Professor John Uri Lloyd for his generous services in caring for this material, free of charge, and filling orders from it for us during the past four years. Not until I actually saw the accumulation did I appreciate the services that Professor Lloyd has rendered and the time and expense that it must have cost him to give this important assistance to the Association. He has refused to accept any compensation, therefore I feel that we owe him a debt of gratitude which can be only partly expressed by such a vote."

Motion No. 15 (*Additional Appropriation of $300 to Item No. 4, Miscellaneous, of Budget of Appropriations*). Moved by W. B. Day, seconded by J. A. Koch, that an additional appropriation of $300 be made to Item No. 4, Miscellaneous, of Budget of Appropriations.

Motion No. 16 (*Vote of Thanks to Prof. John Uri Lloyd*). Moved by W. B. Day, seconded by J. A. Koch, that a vote of thanks be extended by the Council to Prof. John Uri Lloyd for his generous services in caring for material belonging to the Association, free of charge, and filling orders from it for us during the past four years.

J. W. ENGLAND,

415 N. 33RD STREET. *Secretary.*

P. S.—Treasurer Whelpley reports that on January 18, 1919 he had received payments of annual dues for 1919 from over 1200 members, which is an unusual record of promptness in payments.

CORRECTIONS FOR ROSTER.
(January Issue.)

Pharmaceutical Syllabus Committee, E. L. Newcomb's term expires 1919. W. H. Rudder was appointed for the term ending 1925.

General Membership Committees, Edward L. Wickham of Newark is a member of the Committee from New Jersey. M. M. Taylor is chairman of the Committee from Florida, and D. W. Ramsaur is a member from Jacksonville. The address of A. M. Thomas on Special Subcommittee "Pharmacists in Government Service" should be Santa Rosa, Calif., instead of Blaine, Wash.

CORRESPONDENCE

THE POSITION OF THE COMMITTEE ON EDUCATION AND SPECIAL TRAINING IN REGARD TO S. A. T. C. UNITS IN SCHOOLS OF PHARMACY.

WAR DEPARTMENT.

Committee on Education and Special Training, Section of Training and Instruction Branch War Plans Division, General Staff.

January 18, 1919.

CHARLES H. LAWALL, President,
American Pharmaceutical Association,
39 South 10th Street, Philadelphia, Pa.

DEAR SIR:

You have requested, as President of the American Pharmaceutical Association, a statement of the position of the Committee on Education and Special Training in regard to S. A. T. C. units in schools of pharmacy. The basis of this request is that the subject has been under discussion by many who are interested in education in pharmacy and in the pharmaceutical journals, and that it is not clear that the position taken by the War Department has been fully understood. With the permission of the Chairman of the Committee on Education and Special Training the following explanation is made:

The object of the Students' Army Training Corps was to furnish a supply of educated men from whom officers for the new army could be chosen, and to direct their training while in educational institutions so that those selected for commissions would more quickly be prepared to assume their duties as officers. It was strictly a war measure, and not an attempt by the Government to standardize education. Any effect this plan may have had on the problems of eduction in any line in peace times is entirely incidental, and this matter received consideration only to the extent that it was the aim of the Committee to disturb existing methods of education as little as was consistent with the attainment of its aims.

In the case of pharmacy the fundamental consideration was that the needs of the Army for pharmacists would be satisfactorily met through the draft. Although there was no real necessity for the inclusion of pharmacy students in S. A. T. C. for the purpose of supplying pharmacists for the Army, the Committee, nevertheless, decided that a limited number might wisely be accepted on the basis that this training would also prepare them for service as chemists and in other useful capacities. The plan finally evolved was to recognize those pharmacy schools in institutions which already had S. A. T. C. units, and to limit the admission to those students in these schools who were eligible for the Collegiate Section. This required graduation from an approved four-year high school, or an equivalent education.

A committee of representative educators in pharmacy, chiefly from the schools which would be eligible under this plan, was consulted September 29, 1918. This committee was requested to draw up a sample course in pharmacy. As in the case of all programs for courses adopted by the Committee, this program in pharmacy was not prescribed, but was issued as an example of what would be acceptable.

Yours very truly,
Committee on Education and Special Training.
(Signed) By H. D. ARNOLD,
Lieut.-Colonel, Medical Corps, U. S. A.

HDA/MNN

METHYL SALICYLATE SHOULD NOT BE DISPENSED FOR OIL OF WINTERGREEN OR OIL OF SWEET BIRCH.

BY J. W. ENGLAND.

There are reasons for believing that some pharmacists dispense Methyl Salicylate when Oil of Wintergreen or Oil of Sweet Birch is called for, and they do this on the ground that the U. S. Pharmacopoeia (IX) recognizes Oils of Wintergreen and Sweet Birch as synonyms of Methyl Salicylate, but in so doing they are clearly in error, as the following correspondence indicates:

"CHARLES H. LAWALL, Chairman, Committee of Revision, U. S. P.:

Under Methyl Salicylate, U. S. P. IX, Oil of Wintergreen and Oil of Sweet Birch are given as synonyms.

Is a pharmacist justified in dispensing methyl salicylate for oil of wintergreen or oil of birch?

The Pharmacopoeia states that 'the label must indicate whether the methyl salicylate has been made synthetically, or distilled from either of the above-mentioned plants.'

If the label must differentiate, must not the pharmacist differentiate when he receives a prescription for the synthetic or the natural product?

In the U. S. P. VIII, under Veratrum, both *Veratrum Viride* and *Veratrum Album* were recognized, but the pharmacist receiving a prescription for Tincture of Veratrum Viride did not dispense Tincture of Veratrum Album.

(Signed) J. W. ENGLAND."

To this letter the following reply was received:

"MR. J. W. ENGLAND, Philadelphia, Pa.:

In reply to your letter of January 25th, in my opinion a pharmacist is never justified in substituting methyl salicylate for oil of wintergreen or oil of sweet birch where these are called for on prescription or used for medicinal purposes. The clause showing the requirement for differentiating in labeling supports this view.

I cannot see the purpose of the confusing way of including these in the same text, as is done in the U. S. P. IX. The only conditions under which it really makes little or no difference is when the product is used solely in flavoring, and then, strictly speaking, it does not come under the U. S. P. at all.

(Signed) CHARLES H. LAWALL."

DISCHARGE OF PHARMACISTS FROM SERVICE.

Considerable correspondence has passed between President Charles H. LaWall and the War Department relative to the discharge of pharmacists. The following is the last communication received on the subject:

CHARLES H. LAWALL, President, American Pharmaceutical Association:

Referring to your letter of December 16, 1918, addressed to the Surgeon General, in which you inclose copy of a letter to the Provost Marshal General, relative to the discharge of registered pharmacists from the Army, you are informed that, while the services of pharmacists serving in the Medical Department cannot be spared at this time, due consideration will be given to applications for discharge of pharmacists attached to other organizations of the Army.

(Signed) J. C. ASHBURN,
Adjutant General.

WASHINGTON, D. C., January 24, 1919.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.
Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on Progress of Pharmacy, *ex-officio.*

THE MENACE OF COMPULSORY HEALTH INSURANCE.

As pointed out by Dr. J. H. Beal and Chairman Harry B. Mason, the efforts for putting a Compulsory Health Insurance law on the statute books of every state are being continued. The druggists are deeply concerned as citizens, and no business will be more seriously injured than theirs if such legislation is enacted. Active work by the propagandists is being done among legislators and through the medium of editorials in the daily press. Without study of the subject the proposed legislation appeals to legislators and their constituents. Careful investigation has been made by the Committee on Compulsory Health Insurance of the American Pharmaceutical Association; reports and discussions on the proposed legislation have been printed and, for your convenience, reference is made to Volume VI of the Journal of the A. Ph. A., pp. 41, 235, 314, 701, 881, 885 and 1081 and Volume VII, pp. 381 and 899.

The blame of neglect will not rest on the pathfinder, the American Pharmaceutical Association, if this proposed legislation is enacted. Legislatures are in session—watch the calendar; the important subject should be discussed by local associations, business and civic leagues, etc., and the press should be given contra-arguments for editorials. Will you do your part? Study the references given you.

In concluding his remarks before the Wisconsin Medical Society, October 4, 1918, Dr. Edward H. Ochsner of Chicago, said: "I firmly believe that to establish compulsory health insurance would be one of the most serious mistakes that any commonwealth could possibly make, because it would be bound to lower the quality of medical services rendered to its citizens, it would increase loss of working time from sickness, it would throw an enormous financial burden upon the tax-payer, the employer and the employee, it would greatly reduce the incentive to thrift and industry and put a premium on deception, sloth and shiftlessness, and compel the industrious, hard-working, clean-living workman to pay tribute to the untruthful, lazy, shiftless and immoral, and finally, it would have a tendency to take from independence and self-reliance its proper pride and from dependency its salutary shame."

RESOLUTION CONCERNING NOMENCLATURE.

The following resolution was passed by the Division of Organic Chemistry at the meeting of the American Chemical Society, held at Cleveland, Ohio, September 12, 1918. The resolution was unanimously endorsed by the Division of Industrial Chemists and Chemical Engineers at the recent meeting in Cleveland, Ohio:

WHEREAS, *The Journal of the American Chemical Society* and *Chemical Abstracts* have adopted and consistently employ the pure English terms "benzene," "toluene," and "xylene," including all of their derivatives, in place of the hybrid forms "benzol," "toluol," "xylol," etc.; and

WHEREAS, these English terms alone are to be found in publications devoted to pure organic chemistry, both in this country and Great Britain; and

WHEREAS, industrial and technical journals have become lax in their use of these strictly correct English forms; and

WHEREAS, the one-time confusion between the words "benzene" and "benzine" now no longer exists, owing, primarily, to the discontinuance of preparation of this latter named product, and, again, to a recent and well-made suggestion of the term "benzolene" for this same petroleum benzine fraction, if later to be placed on the market;

Therefore be it Resolved, that the members of the Division of Organic Chemistry of the AMERICAN CHEMICAL SOCIETY shall hereafter encourage the use of these English terms exclusively, where and whenever opportunity permits.

This is an opportune time for coöperation in the movement for better or more uniform nomenclature. There are chemical terms which are of greater importance for chemists

than pharmacists; the reverse is also true. The *ine* ending for alkaloids could just as well be adopted by chemists; for pharmacists it differentiates these from other principles. Pharmacists should, perhaps, spell "gram" without the *me;* the abbreviation, however, should be "Gm.," using l. c. letters for smaller denominations. The JOURNAL has adhered to the spelling of the U. S. Pharmacopoeia. The abbreviation for cubic centimeter should be Cc., the first letter having reference to "cubic." The word "percent" has been used in this publication instead of the word *per* and abbreviation for *centum*, convinced that the contraction is as justifiable as for many other words that might be cited; when the two words *per* and *centum* are used this argument does not hold, therefore, there is no hesitancy in employing the abbreviation *p. c.* or mark, %. Some of these questions were discussed in the JOURNAL A. PH. A., for August 1916, Vol. V, p. 900.

Progress is being made on the nomenclature of cultivated plants. There are many problems which concern related industries and professions and point out the value and need of coöperation.

DIFFERENCE IN THE BEHAVIOR OF THE RESINS FROM PODOPHYLLUM PELTATUM AND P. EMODI.

In a recent presentation, before the Pharmaceutical Society of Great Britain (evening meeting, Edinburgh, December 18, 1918), D. B. Dott said that some years ago he had proposed the introduction of a test depending on the different behavior of the resins from *Podophyllum peltatum* and *P. Emodi* towards solution of ammonia. He stated that, when treated with a moderate amount of dilute ammonia, *P. Emodi* resin leaves at least twice as much insoluble matter as that of resin from *P. peltatum*. The insoluble portion varies greatly according to the proportion of ammonia and period of maceration, but there is, with like treatment, a greater insoluble portion from the former; proportionate figures given from tests were, as 25–60, 16–43, and 21–55. He submitted that 0.5 Gm. resin (from *P. peltatum*) when mixed with 5 Cc. of dilute ammonia (10%) and 5 Cc. of water, filtering after twenty minutes, washed and dried at 100° C. should not leave more than 0.13 Gm. (26 percent).

The pharmacologic question did not enter into the discussion; the difference in constituents or relative proportion of them was admitted, and also that variation in solubility was due, to some extent, to the method of preparation and storage. Mr. Dott conceded that the U. S. P. test with alcohol and alkali is probably more distinctive, but an ammonia test may be a useful addition.

APPLICATION OF MAGNESIUM SULPHATE TO SCALDS.

Dr. S. J. Meltzer in the *Journal of Pharmacology*, and *Experimental Therapeutics* for November 1918 records results of experiments with external application in burns of a concentrated solution of magnesium sulphate carried out several years ago; the experiments were repeated and similar results were obtained. The experiments were made on noninjured and nonshaved rabbits' ears. The animal was deeply anesthetized. About one-third of each ear was submerged for a short period in hot water. Then the water was removed and one ear was submerged in a 25 percent solution of epsom salt (1 mol. $MgSO_4$ + 7 mol. of water) and the other ear was submerged in a solution of sodium chloride (either 0.9 or 6 percent). The ears were kept submerged in these solutions for about two or three hours, the solutions being changed two or three times during this period. The experiments with submersion in water of temperatures between 56 and 63° C. have always shown that the inflammation of the ear which was submerged in $MgSO_4$ was undoubtedly retarded or nearly completely prevented.

Meltzer has also had occasion to see cases of burns in human beings. First and second degree burns were invariably arrested in their development when molecular solutions of $MgSO_4$ were applied early. Third degree burns, as a rule, ran a more favorable course under application of $MgSO_4$ than under any other treatment. Higher concentrations than 25 percent seem to exert a still better influence. The favorable action of the application of $MgSO_4$ in advanced stages of burns of second and third degree is less striking, especially on account of the infection present; but even in this stage it seems to exert a favorable influence and according to Meltzer ought to be used either in combination, or alternatingly, with antiseptics.—Through *J. A. M. A.*

VALUE OF SACCHARIN AS FOOD IN DIABETES.

From his experiments, reported in the *Medical Record*, December 21, 1918, the conclusion is drawn by Dr. W. E. Burge that saccharin, in addition to serving as a sweetening agent, serves to facilitate oxidation, and hence should be positively helpful, particularly in a disease such as diabetes, where the principal trouble is defective oxidation, instead of harmful, as some have claimed.

SPHAGNUM MOSS.

Dr. G. H. Heald writing in *Sanitarium Quarterly* states that, "many of the processes and medicaments in use by physicians have been borrowed from a non-medical source. Perhaps for generations the knowledge of their use has been handed down from mother to daughter, or from father to son. Meantime the profession has looked upon these 'grandmother's remedies' with scorn, or at least with indifference, until some physician who was not too wise to learn from his lay friends has made a discovery which he duly reported to his medical society, or described it in a Medical Journal, and it became the common property of the profession.

"A notable example is the discovery of vaccination by Jenner. The country folk were well aware of the fact that persons who, as a result of milking cows with sore udders, contracted cow-pox, were immune to smallpox. But it took a Jenner to force this idea of the protective influence of cow-pox into the minds of a rather reluctant profession.[1]

"A grandmother's remedy more recently adopted by the profession is the use of sphagnum moss as a surgical dressing. History does not record how far back 'bog moss' has been in use by the country people as a dressing for boils and discharging wounds. Perhaps some physicians were aware of this practice, but if so, they did not realize their opportunity, and passed it by as unworthy of their notice.

"But back in the seventies of the last century a circumstance brought the virtues of this moss to the attention of a surgeon who did not let slip the opportunity to enrich medical practice. A laborer in a peat moor in northern Germany was seriously wounded in the forearm. Not having surgical dressings at hand his companions applied 'first aid' in the form of 'peat moss' picked up from the ground. Surgical help could not be obtained for ten days. Meantime the dressings were not changed. When finally the surgeon undid the wound, he was astonished to find it practically healed. Not being of the hidebound variety, he communicated his findings to his fellow physicians, and further investigation showed the great superiority of Sphagnum moss as a dressing for discharging wounds. It then became a standard dressing in hospital and private practice. In the Russo-Japanese war, the Japanese physicians used it extensively as a first-aid dressing at the front, and sometimes these dressings were not removed for as long as ten days, and yet the wounds were generally found to be in much better condition than similar wounds dressed with cotton.

"There are several points in which Sphagnum moss is superior as a dressing to absorbent cotton. It will absorb liquid more rapidly, and will take up about three times as much liquid as cotton, and will retain it better than cotton. The liquid absorbed by Sphagnum distributes equally through the dressing, thus the moss continues to absorb fluid until it is completely saturated. A cotton pad will not do this.

"In ordinary hospital practice where the surgeon has the time and the material to dress his wounds from time to time cotton answers well every purpose; but where wounds must be hastily dressed, to remain without further attention for an indefinite time, Sphagnum is so far superior to cotton as to be in a class by itself. The last but not by any means the least advantage of Sphagnum is that it is much cheaper than cotton. It may never entirely replace cotton in hospital and private practice, but in the emergency practice of the battlefield it is likely to be used in preference to cotton, so long as the supply lasts."

LINEN PLANT TAGS.

Linen cloth is now being used to some extent for tagging plants. Writing on wooden tags soon becomes illegible, while copper tags are not only expensive, but are not large enough for sufficient data. The linen tags are first soaked several days in water to remove the sizings and then dried and smoothed with a hot flatiron. Data are written with India ink, using a round-pointed pen. The ink soaks in but does not run. Such tags will last

[1] See also p. 38, January issue, JOURNAL A. PH. A.

a year or longer. When they are to be used for longer periods or under conditions where the tags come in contact with the ground, they are coated with paraffin after labeling. One method is to dip them in a mixture of gasoline and paraffin (proportion, 1 quart of gasoline to one-half pound paraffin). The gasoline evaporates, leaving a film of paraffin. If the tags become coated with mud, they can easily be washed and the ink shows up clearly. Such tags may be used in a variety of ways, for when treated in this manner they last exceptionally well.—*Jour. N. Y. Botanical Garden.*

SOCIETIES AND COLLEGES.

THE HOSPITAL CORPS OF THE NAVY.*

At a meeting of the National Pharmaceutical Service Association held in the Philadelphia College of Pharmacy on Friday evening, December 20th, Lieutenant Commander George F. Cottle, Detail Officer of the Hospital Corps of the United States Navy, and Lieutenant W. T. Minnick, Commandant of the Hospital Corps unit, training at the Philadelphia College of Pharmacy, presented a comprehensive and interesting account of the work of the organization in the war.

Up to 1898 the "apothecary" of the Navy was an appointee of the medical officer under whom he was to serve, being selected from the "baymen" or from civil life. The "baymen" were enlisted men detailed as nurses from other branches of the Naval service and frequently were those who had proven inefficient elsewhere. They were not selected for special fitness or training for the work. When the services of the apothecary were no longer needed, he was discharged from the Naval service.

As the work of the Medical Corps increased, and more need was found for proper hospital facilities and medical aid, a permanent Hospital Corps was established by law. This was in 1898. The Corps consisted of Hospital Apprentices, Hospital Apprentices, 1st class, Hospital Stewards, and twenty-five Pharmacists, with warrant rank.

No further change was made in the organization of the Corps until 1912, when the rank of "Chief Pharmacist" was established. This grade carried with it pay and allowances of an ensign, which is that of the Annapolis graduate when first detailed to duty.

The services rendered by the Hospital Corps had been of such value as to justify the recommendation by the Surgeon-General of the Navy for the advanced rank.

In 1916, in recognition of the efficiency shown by these pharmacists, legislation was secured from Congress, authorizing the appointment of as many pharmacists as the needs of the service demanded, and in 1917 the Surgeon-General further recognized the importance of the service by recommending temporary rank of Lieutenant (Junior Grade), and Lieutenant, for 82 of the members of the Corps, and the appointment of 220 Pharmacists (temporary). The several ratings of the Corps are Hospital Apprentices, second and first class; Pharmacist's mate, third, second and first class; Chief Pharmacist's Mate (acting appointment), Chief Pharmacist's Mate (permanent appointment); Pharmacist, and Chief Pharmacist. For the period of the war, all Pharmacists and Chief Pharmacists were advanced first to Lieutenants (Junior Grade) and later to Lieutenants, and a large number of Chief Pharmacists' Mates were given temporary appointments as Pharmacists.

The duties of the members of this Corps, especially those who hold the higher ratings, are greatly varied and call for many qualifications and extensive training.

Nursing.—Inasmuch as women nurses are not available for sea duty, this group of men are required to perform any nursing duties which the needs of the service may demand, such as the care of the sick, giving of baths, the care of the bed, and bed clothing, taking of temperature, pulse, and respiration, preparing of charts, the administration of enemas and hypodermics, the preparation of patients for the operating room and any of the various services appertaining to nursing.

Operating Room.—In addition to the preparation of the patients for operations, these men are trained to take care of the surgical instruments and equipment, to do all of the necessary sterilization, know the instruments, care for them and to make all preparation for operations. During the operation, they may serve as assistants to the surgeon, and often

* From reports of Secretary E. Fullerton Cook of the National Pharmaceutical Service Association.

administer the anesthetic. They may also be called upon to prepare the injection and assist in administering arsphenamin (salvarsan).

Ward Management.—The Hospital Corpsmen become the responsible officials in the establishment and management of the Hospitals. They are responsible for much of the internal organization of the hospital, for the cleanliness and routine work of the ward, and also responsible for all records and property.

X-Ray Department.—A limited number of men have received special training as X-ray operators. This is becoming increasingly important and the complete specialized training must include the knowledge of apparatus and experience in the taking of X-ray pictures and X-ray examinations, and also the development of the plates and making of prints.

Recruiting.—In the recruiting stations of the Navy, the Hospital Corpsmen serve as assistants, making the preliminary physical examinations, preparing the necessary records and securing the identification data, including the making of finger print impressions.

Commissary.—Pharmacists are responsible for the planning and administration of the commissary department and equipping a Naval hospital for any number of patients up to 2,000. This includes not only the equipment of the various wards and divisions of the hospital, but also the procuring of the food, its inspection and the supervision of the preparation of special diets for the patient.

Transportation.—The transportation of wounded and sick on board ship is often a difficult problem, and requires knowledge and skill in the methods of handling, the use of stretchers and ambulances, and the preparation of the injured for transportation. This duty falls entirely upon the Hospital Corps.

First Aid.—As the hospital corpsman secures experience and rating justifying advancement to the rate of Chief Pharmacist's Mate, he is often placed on "independent duty." Most of the smaller ships of the Navy, destroyers, submarines, mine-sweepers, and cargo ships, need medical aid, and the hospital corpsman here serves as the first aid medical officer. Every kind of emergency work may fall to his lot. Sickness, accidents, or other injuries may require his attention at any time. He must be familiar with antidotes to poisons, and all of the many emergency conditions which he may face. This includes, not only the occurrences which may happen aboard ship, but, when ashore in our Island Possessions, he may be called upon at outlying stations to administer first aid and help to the native population.

Laboratory Technique.—Their knowledge of chemistry and microscopy must be sufficient to aid in a proper control over the water supply, to make an examination of foods, carry out such clinical tests as may be demanded, such as blood examination, urine tests, examination of feces, the Widal and Wassermann tests, etc., as any of these may become a part of their duty.

Pharmacy.—As a pharmacist, the hospital corpsman will have charge of the dispensary either in hospitals on land or on board ship. This rarely calls for the manufacture of pharmaceuticals, but must embrace a knowledge of the medicines on the supply table of the Navy as well as those generally used in medical practice and sufficient chemical training to pass upon the quality of these supplies. The ordering and the proper care of the medical supplies and pharmaceutical equipment, together with the bookkeeping records of the department, the compounding of the prescriptions, and the preparation of such materials as the Dakin-Carrel Solution, are a part of the every-day work.

Clerical.—An important function of the Hospital Corpsman is clerical. The typewriter must be used for reports. They must be familiar with the bookkeeping methods of the commissary department and must be prepared to take charge of, or supervise such records. They must supervise the Hospital galley (kitchen) and mess-hall, and must oversee the ordering of supplies and are responsible for the storage and quality of foods. They must be familiar with all forms used in the medical corps, and be able to properly prepare them. These forms include records of enlistment, discharge, medical examinations, laboratory tests, sick and death reports, requests for leave, official correspond ence, etc.

Hygiene and Sanitation.—At any time, the hospital corpsman may be detailed to serve on shore duty with the marines. Here he occupies the important position of sanitary officer. He must be qualified to establish a camp, look after the water supply, examine the quality of water available, and, if necessary, purify it for the troops, take care of all refuse about the camp, establish proper

latrines, provide bathing facilities and install and superintend the operation of incinerators for the disposal of all sewage and refuse. In this service, he must also be prepared to establish and equip a field hospital and aid in its management, as has already been outlined.

LIEUTENANT COMMANDER COTTLE.

Lieutenant Commander Cottle illustrated the work of the Corps by a number of lantern slides and drawings, showing the possibilities and training given by the Navy under the present Naval regulations, and also the enormous growth of the organization during the present war. He also spoke of the splendid service rendered, under many trying conditions, by this branch of the service.

Dr. Cottle in subsequent remarks, in answer to some of the comments, set forth the spirit which should animate those who seek service in the Corps in war time. The essence of his statement was that every American citizen undoubtedly wished to serve his Country in some capacity during such a time of struggle as that through which we have passed, and that, if his opportunity came through service in this Corps, then the question of mere personal advantage or rating rightly took a second place as compared with service to be rendered. He stated that it could not be expected that men without proper military training should immediately upon first enlistment be given a high rating; that efficient Naval service required extensive military training, and that the opportunity to do one's bit in an honorable way had been welcomed by many men, and should be gratifying to the young men of the Country. He called attention, however, to the fact that for men qualified both in professional and military subjects, there was provided in the Navy an excellent opportunity for recognition and pay in the Hospital Corps, and that for men in the Naval service and who were prepared to assume the increased responsibility of war, temporary commissions, and larger opportunity for service were given.

In concluding his report of the meeting Secretary E. Fullerton Cook states that it will be seen by pharmacists that the duties of members of this corps are far broader than the usual activities of the apothecary in civil life, although pharmaceutical training in accordance with the curriculum of a modern college of pharmacy embraces a large percentage of the work demanded of the hospital corpsmen. The full recognition of pharmacy in the Navy with its related activities, as the collaborator with the physician in the maintenance of health, treatment of disease, and the healing of wounds has been established, and every pharmacist in the country should lend his aid to the Naval authorities. Men who secure commissions are required to successfully pass severe competitive examinations. Naval pharmacists firmly believe in proper control over the granting of commissions to Pharmacists in the Navy, and with the new light which has come to all who are interested in the Medical Department of the Navy and in the work of its Pharmacists and Hospital Corpsmen, the N. P. S. A. may well be proud of the work that has been done by pharmacists in the Naval service and glad of the recognition the Navy has accorded them.

CHANGES OF ADDRESS.

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of the change of address is received before shipment or mailing.

Both the old and the new address should be given thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written or typewritten.

BLUESTONE, I.
From 354 Craft Ave., Pittsburgh, Pa.
To 2130 5th Ave., Pittsburgh, Pa.

COUSINS, W. H.
From 1314 Wyoming St., Dallas, Tex.
To 1314 Young St., Dallas Tex.

GARVEY, JAS.
From 1429 Euclid Ave., Philadelphia, Pa.
To 895—97th St., Woodhaven, N. Y.

GAY, MRS. ST. CLAIRE.
From 2787 Broadway, New York, N. Y.
To 245 W. 10th St., New York, N. Y.

MOORE, M. S.
From 320 W. Lapeer St., Lansing, Mich.
To Fowler, Mich.

BUSCHEMEYER, J. H.
From 400 4th Ave., Louisville, Ky.
To 4th Ave., Cor. Jefferson, Louisville, Ky.

ANDERSON, A. E.
From 1824 13th St., Moline, Ill.
To Residence unknown.

THOME, E. R.
From 2546 Reading Road, Cincinnati, O.
To 406 Wildwood Ave., Jackson, Mich.

BROWN, A. F.
From 1445 N. 29th St., Philadelphia, Pa.
To 6116 Ludlow St., Philadelphia, Pa.

BRILES, D. E.
From 124 Hay St., Fayetteville, N. C.
To Rocky Mount, N. C.

DARBAKER, L. K.
From 7021 Bennett St., Pittsburgh, Pa.
To 7025 Hamilton Ave., Pittsburgh, Pa.

SNELL, TOM J.
From Cooper, Texas.
To Paris, Texas.

BREWER, H. D.
From 4 Congress St., Worcester, Mass.
To 19 Oxford St., Worcester, Mass.

GIFFORD, E. R.
From 23 Robin Hood St., Dorchester, Mass.
To 87 Vernon St., Boston, Mass.

CHRISTENSEN, H. C.
From 450 Bowen Ave., Chicago, Ill.
To 130 North Wells St., Chicago, Ill.

ABBETT, WM. A.
From 205 W. Superior St., Duluth, Minn.
To 219 W. Superior St., Duluth, Minn.

LADRIGAN, J. P.
From 321 E. University Ave., Cincinnati, Ohio.
To 2358 N. Bedford Ave., c/o E. W. Hills, Cincinnati, O.

BUSS, O. C.
From 6751 Blackstone Ave., Chicago, Ill.
To Parke, Davis & Co., 162 N. Franklin St., Chicago, Ill.

FLETCHER, J. M.
From 901 W. Jefferson St., Dallas, Texas.
To 101 N. Lancaster Ave., Dallas, Texas.

GRAY, HAROLD
From 537 E. 11th St., Indianapolis, Ind.
To 2813 Ruckle St., Indianapolis, Ind.

DONNET, J. S.
From 1442 E. Front Ave., Baltimore, Md.
To Residence unknown.

NAGLE, E. G.
From 92 Coolidge St., Brookline, Mass.
To 35 Washburn Ave., N. Cambridge, Mass.

CRAMER, LOUIS H.
From 72 Clinton St., Saratoga Springs, N. Y.
To c/o G. T. Harvey Co., Saratoga Springs, N. Y.

FRUTCHEY, GEO. W.
From 201 E. Broad St., Westfield, N. J.
To Box 25, Westfield, N. J.

GRIESING, H. W.
From 21 N. Center St, Merchantville, N. J.
To 446 E. Broadway St., Hazleton, Pa.

GREENBERG, EARL
From 823 Logan St., Minneapolis, Minn.
To 815 Logan St., Minneapolis, Minn.

KALISH, O. G.
From S. W. Cor. 59th and Madison, New York, N. Y.
To 628 Madison Ave., New York, N. Y.

HOCKERT, B. E.
From 2 W. Holcomb St., Hartford, Conn.
To Box 700, Hartford, Conn.

WESNER, H. C.
From Box 22, Windsor, Mo.
To Box 388, Windsor, Mo.

STERNFELS, U. R.
From 4022 Palm St., St. Louis, Mo.
To 3516 Girard St., St. Louis, Mo.

MERRILL, E. C.
From 1211 Girard St., Washington, D. C.
To c/o United Drug Co., Boston, Mass.

KUENZIG, P. A.
From 121 Spencer Ave., Carrick, Pa.
To 2727 Custer St., Carrick, Pa.

SCHOENHUT, C. H.
From 410 W. Superior Ave., Cleveland, Ohio.
To 1423 Detroit Ave., Lakewood, O.

PFEIFFER, G. A.
From 115 E. 29th St., New York, N. Y.
To 113 W. 18th St., New York, N. Y.

STEIGER, L.
From Hillside, N. J.
To 400 Lookout Ave., Hackensack, N. J.

ROSENZWEIG, B.
From 381 Gold St., Brooklyn, N. Y.
To 495 8th St., Brooklyn, N. Y.

WILLIAMS, J. L.
From Box 308, Three Rivers, P. Q., Can.
To Box 718, Three Rivers, P. Q., Can.

WOLFE, J. A.
From 410 Chestnut St., Philadelphia, Pa.
To 40th and Penn Ave., U. S. Marine Hosp., Pittsburgh, Pa.

THOMPSON, H. L.
From 710 N. 26th St., Lincoln, Neb.
To 2931 You St., Lincoln, Neb.

YATES, FRANKLIN B.
From 159 Leonard St., New York, N.
To 155 Leonard St., New York, N.

VOIGHT, J. F.
From 840 Market St., Chattanooga, Tenn.
To 12th and Chestnut St., Chattanooga, Tenn.

BULLARD, M. L.
From Box 54, Dexter, Me.
To Box E, Dexter, Me.

KANTROWITZ, HUGO
From 600 W. 178th St., New York, N. Y.
To 104 John St., New York, N. Y.

RITTER, W. A.
From 273 17th St., Milwaukee, Wis.
To c/o Miss F. Ritter, 629 Peosta Ave., Helena, Mont.

MUELLER, N. R.
From Univ. of Wis., Milwaukee, Wis.
To Bureau of Plant Industry, Washington, D. C.

ROSENGARTEN, A. G.
From 9th & Parrish Sts., Philadelphia, Pa.
To Box 1625, Philadelphia, Pa.

RODRIGUEZA, RENE
From Sarin Hall, Notre Dame, Ind
To Residence unknown.

HIRSCHER, A. M.
From 1807 4th St., S. E., Minneapolis, Minn.
To Residence unknown.

WHITTNEY, R. B.
From 126 Willet St., Jamaica, N. Y.
To Residence unknown.

ROVNO, LEON
From 1616 N. 8th St., Philadelphia, Pa.
To Residence unknown.

SHIPPEY, EARL F.
From 5601 N. Crawford Ave., Chicago, Ill.
To Field Hosp. 342, Camp Grant, Ill.

DEFFAA, G. C.
From 168 E. 66th St., New York.
To 1719 Holland Ave., New York.

HENWOOD, EARL C.
From 41 Gates St., Westmoor, Pa.
To c/o Hazle Drug Co., Hazleton, Pa.

LA CAMP, WILLIAM
From The Georgian Flats, Madison Road and Paul St., Cincinnati, O.
To 3773 Andrew St., Oakley, Cincinnati, O.

MILLER, BERNARD
From 143 West End Ave., New York City.
To Residence unknown.

FULLER, JAMES COOK
From 1012 Baltimore Ave., Kansas City, Mo.
To 310 Elmhurst Bldg., Kansas City, Mo.

NISH, FREDERICK W.
From 1022 Masonic Ave., San Francisco, Cal.
To 22 Parnassus Ave., San Francisco, Cal.

BLOCK, MITCHELL
From Excelsior Springs, Mo.
To c/o E. C. White, Kansas City, Mo.

RAUCHFLEISCH, EDW. C.
From 13427 Euclid Ave., Cleveland, O.
To 13861 Euclid Ave., Cleveland, O.

PODOLSKY, REUBEN
From 885 Jennings Ave., New York City.
To 1308 Wilkins St., New York City.

STARR, MABEL C.
From Hospital of Univ. of Penn., 3400 Spruce St., Philadelphia, Pa.
To 20 Main St., Glens Falls, N. Y.

GODLEWSKI, CHAS.
From 1880 West Third St., Chester, Pa.
To 2380 W. Third St., Chester, Pa.

ROSE, WILLIAM W.
From Box 77, Berlin, Md.
To Smyrna, Del.

BANDTEL, CHARLES M.
From R. F. D. 1, Redwood Heights Farm, Santa Cruz, Cal.
To 1159 Masonic Ave., San Francisco, Cal.

HERETH, F. S.
From Berlin, N. H.
To c/o E. R. Squibb & Sons, Washington and York Sts., Brooklyn, N. Y.

APPLE, FRANKLIN M.
From 3233 W. Berks St., Philadelphia, Pa.
To General Delivery, St. Petersburg, Fla.

MULFORD, H. K., JR.
From Camp Devens, Mass.
To Wayne, Pa.

DECEASED.

FULLER, CHAS. F.
540 W. Randolph St., Chicago, Ill.

VORDICK, A. H.
6351 Berlin Ave., St. Louis, Mo.

COOPER, James W.
1 Court St., Plymouth, Mass.

KLEINAU, GEO.
941 Park Ave., New York, N. Y.

MAYER, PETER
103 N. 2d St., Marshalltown, Ia.

SCHAPPER, F. C.
617 Arlington Pl., Chicago, Ill.

PEGG, H. W.
887 Market St., Kingston, Pa.

WOLF, M. F.
Eastern Ave. and Chester St., Baltimore, Md.